Access DB# 57751

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Qu Ping Examiner #: 77924 Date: 1/9/02
Art Unit: 1774 Phone Number 30 5 Serial Number: 09/445050
Mail Box and Bldg/Room Location: 11D28 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

***For Sequence Searches Only** Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: K. Fuller	NA Sequence (#)	STN ✓
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) 2	Questel/Orbit
Date Searcher Picked Up:	Bibliographic	Dr.Link
Date Completed: 1/10/02	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 20	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time: 35	Other	Other (specify)

PTO-1590 (8-01)

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FILE 'REGISTRY' ENTERED AT 16:18:58 ON 10 JAN 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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STRUCTURE FILE UPDATES:     8 JAN 2002  HIGHEST RN 381163-99-1
DICTIONARY FILE UPDATES:    8 JAN 2002  HIGHEST RN 381163-99-1

TSCA INFORMATION NOW CURRENT THROUGH July 7, 2001

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Calculated physical property data is now available.  See HELP PROPERTIES
for more information.  See STNote 27, Searching Properties in the CAS
Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

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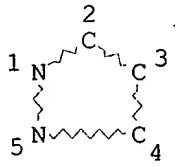


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B 7
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query covers claim 24

510 structures found

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NODE ATTRIBUTES:
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NSPEC   IS RC     AT   7
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   7

STEREO ATTRIBUTES: NONE
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L7          510 SEA FILE=REGISTRY SSS FUL L3 AND L5
L8           45 SEA FILE=REGISTRY ABB=ON  L7 AND 1-3/TB
L9            4 SEA FILE=REGISTRY ABB=ON  L8 AND 3/F
L10           1 SEA FILE=REGISTRY ABB=ON  L9 AND C31H44B2F3N12O3STB/MF

=> D L10

L10  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2002 ACS
RN   217956-36-0  REGISTRY
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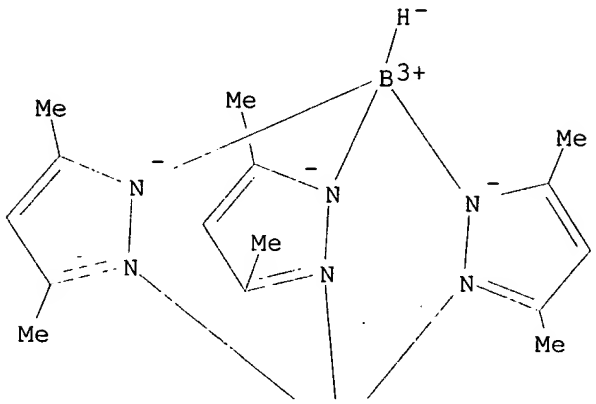
elected

CN Terbium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)
MF **C31 H44 B2 F3 N12 O3 S Tb**
CI CCS
SR CA
LC STN Files: CA, CAPLUS

PAGE 1-A



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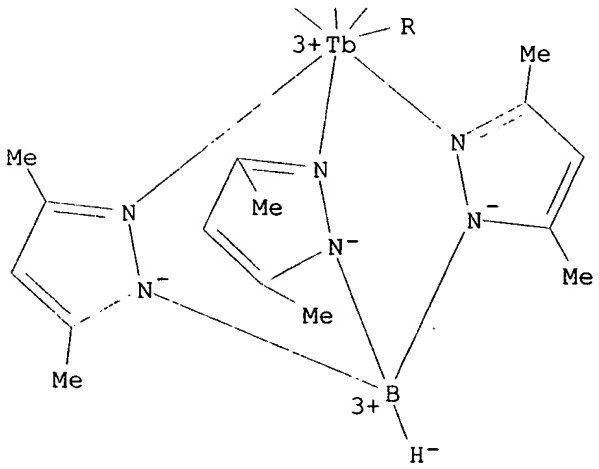

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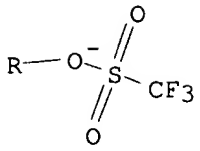

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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FILE COVERS 1907 - 10 Jan 2002 VOL 136 ISS 2
FILE LAST UPDATED: 8 Jan 2002 (20020108/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

HCAplus now provides online access to patents and literature covered in CA from 1907 to the present. Bibliographic information and abstracts were added in 2001 for over 3.8 million records from 1907-1966.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> S L10
L13 1 L10

=> D BIB L13

L13 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:806731 HCAPLUS
DN 130:73617
TI Organometallic complexes
IN Christou, Victor
PA Isis Innovation Ltd., UK
SO PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DT Patent

applicant

LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9855561	A1	19981210	WO 1998-GB1587	19980601
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	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
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	EP 988353	A1	20000329	EP 1998-924488	19980601
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PRAI	GB 1997-11237		19970602		
	WO 1998-GB1587		19980601		

OS MARPAT 130:73617
RE.CNT 3
RE
(1) Armaroli, N; Chemical Physics Letters 1997, V276(5-6), P435
(2) Univ Princeton; WO 9806242 A 1998 HCAPLUS
(3) Wallac OY; WO 9311433 A 1993 HCAPLUS

=> D QUE L16
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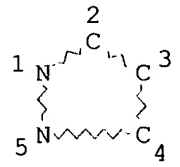

B 7

M 6

NODE ATTRIBUTES:
NSPEC IS RC AT 6
NSPEC IS RC AT 7
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE
L5 SCR 1957 AND 1932
L7 510 SEA FILE=REGISTRY SSS FUL L3 AND L5
L8 45 SEA FILE=REGISTRY ABB=ON L7 AND 1-3/TB
L9 4 SEA FILE=REGISTRY ABB=ON L8 AND 3/F
L10 1 SEA FILE=REGISTRY ABB=ON L9 AND C31H44B2F3N12O3STB/MF
L11 349 SEA FILE=REGISTRY ABB=ON L7 AND 1-3/TB,CE,EU,ER,GD,TM,SM,ND

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L15           17 SEA FILE=HCAPLUS ABB=ON  L14 AND (EL OR ?LUMINESC? OR LIGHT?(4A
                 )EMIT?)
L16           17 SEA FILE=HCAPLUS ABB=ON  L13 OR L15
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17 CA references from structures & application includes full CA record for elected species

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=> D L16 ALL 1-17 HITSTR

L16  ANSWER 1 OF 17  HCAPLUS  COPYRIGHT 2002 ACS
AN   2000:619086  HCAPLUS
DN   133:368714
TI   Synthesis, luminescence studies and crystal structures of two
     europium(II) hydrotris(pyrazol-1-yl)borate complexes:
     Eu(HBpz3)2.cntdot.2DPSO and Eu(HBpz3)2.cntdot.2BPMU
AU   Carvalho, A.; Domingos, A.; Isolani, P. C.; Marques, N.; Pires de Matos,
     A.; Vicentini, G.
CS   Departamento de Quimica, ITN, Sacavem, 2686-953, Port.
SO   Polyhedron (2000), 19(14), 1707-1712
     CODEN: PLYHDE; ISSN: 0277-5387
PB   Elsevier Science Ltd.
DT   Journal
LA   English
CC   78-7 (Inorganic Chemicals and Reactions)
     Section cross-reference(s): 73, 75
OS   CASREACT 133:368714
AB   Europium(II) hydrotris(pyrazol-1-yl)borate complexes, Eu(HBpz3)2L2 (L =
     diphenylsulfoxide, 1; bis(pentamethylene)urea, 2), were synthesized.
     Characterization of 1 and 2 by IR absorption spectroscopy points to
     coordination of the neutral ligands through the sulfoxide and carbonyl
     oxygens, resp. This was corroborated by x-ray diffraction anal. In both
     compds. the metal center is eight-coordinate by way of the six nitrogens
     of the two tridentate pyrazolyl ligands and the oxygen atoms of the
     diphenylsulfoxide or bis(pentamethylene) urea ligands, in a square
     antiprismatic configuration. Both complexes are luminescent at
     77 K and display emission bands with maxima at 610 and 632 nm for 1 and 2,
     resp.
ST   crystal structure europium hydrotrispyrazolylborato sulfoxide urea;
     europium hydrotrispyrazolylborate sulfoxide urea prepn structure
     luminescence; pyrazolylborate hydrotris europium prepn structure
     luminescence
IT   Molecular structure-property relationship
        (luminescence; of europium(II) hydrotris(pyrazolyl)borato
        diphenylsulfoxide and bis(pentamethylene)urea complexes)
IT   Crystal structure
       Luminescence
     Molecular structure
        (of europium(II) hydrotris(pyrazolyl)borato diphenylsulfoxide and
        bis(pentamethylene)urea complexes)
IT   306970-50-3P 306970-52-5P
     RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
        (prepn., crystal and mol. structure and luminescence)
IT   945-51-7  5395-04-0, Bis(pentamethylene)urea
     RL: RCT (Reactant)
        (reactant for prepn. of europium(II) hydrotris(pyrazolyl)borato
        complex)
IT   170126-33-7
     RL: RCT (Reactant)
        (reactant for prepn. of europium(II) hydrotris(pyrazolyl)borato
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diphenylsulfoxide and bis(pentamethylene)urea complexes)
RE.CNT 24
RE
(1) Alvarez, H; J Coord Chem 1998, V43, P349 HCAPLUS
(2) Bunzli, J; J Alloy Comp 1994, V207, P107
(3) Domingos, A; Polyhedron 1995, V14, P3067 HCAPLUS
(4) Drew, M; Coord Chem Rev 1977, V24, P179 HCAPLUS
(5) Edelmann, F; Angew Chem Ind Ed Engl 1995, V34, P2466 HCAPLUS
(6) Evans, W; J Am Chem Soc 1985, V107, P941 HCAPLUS
(7) Fair, C; MOLEN 1990
(8) Freitas, M; unpublished results
(9) Girard, P; J Am Chem Soc 1980, V102, P2693 HCAPLUS
(10) Isolani, P; Quim Nova 1994, V17, P65 HCAPLUS
(11) Jiang, J; Coord Chem Rev 1998, V170, P1 HCAPLUS
(12) Johnson, C; ORTEP2 Report 1976, ORNL-5138
(13) Maunder, G; J Chem Soc Chem Commun 1994, P885 HCAPLUS
(14) Molander, G; Chem Rev 1992, V92, P29 HCAPLUS
(15) Moss, M; Polyhedron 1993, V12, P1953 HCAPLUS
(16) Muetterties, E; J Am Chem Soc 1974, V96, P1748 HCAPLUS
(17) Sheldrick, G; SHELXS-86 1986
(18) Sheldrick, G; SHELXS-93 1993
(19) Takats, J; J Alloys Compd 1997, V249, P52 HCAPLUS
(20) Takats, J; Organometallics 1993, V12, P4286 HCAPLUS
(21) Trofimenko, S; J Am Chem Soc 1967, V89, P3170 HCAPLUS
(22) van Leeuwen, P; Rec Trav Chim Pays-Bas 1967, V86, P201 HCAPLUS
(23) van Leeuwen, P; Rec Trav Chim Pays-Bas 1967, V86, P721 HCAPLUS
(24) Zhang, X; New J Chem 1995, V19, P573 HCAPLUS
IT **306970-50-3P 306970-52-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal and mol. structure and **luminescence**)
RN 306970-50-3 HCAPLUS
CN Europium, bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-
.kappa.N2,.kappa.N2',.kappa.N2'']bis[1,1'-(sulfinyl-.kappa.O)bis[benzene]]-
, (SA-8-112222'2'2')- (9CI) (CA INDEX NAME)

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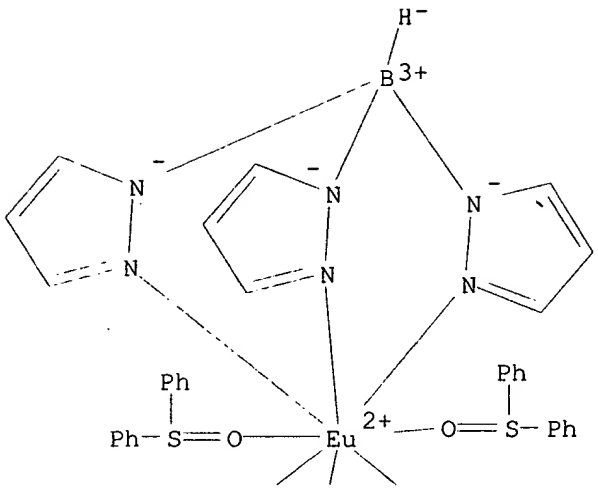

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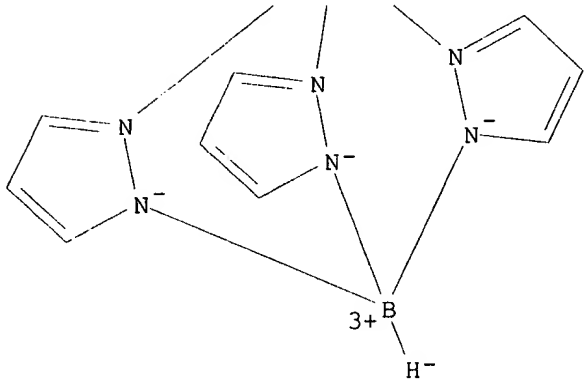

RN 306970-52-5 HCAPLUS
CN Europium, bis[1,1'-(carbonyl-.kappa.O)bis[piperidine]]bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (SA-8-112222'2'2')- (9CI) (CA INDEX NAME)

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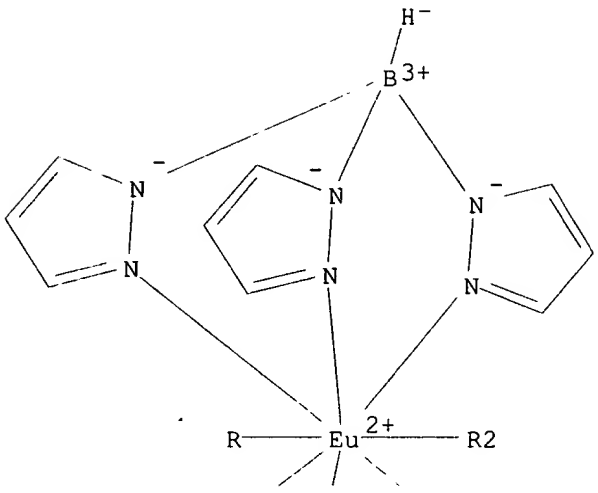

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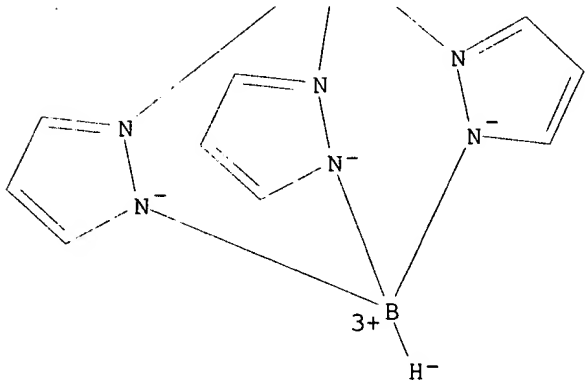

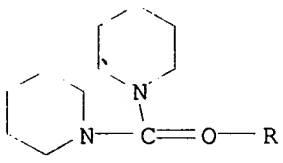

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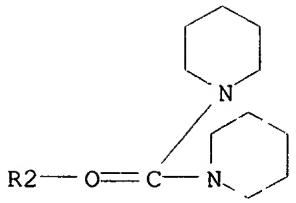

IT **170126-33-7**
RL: RCT (Reactant)
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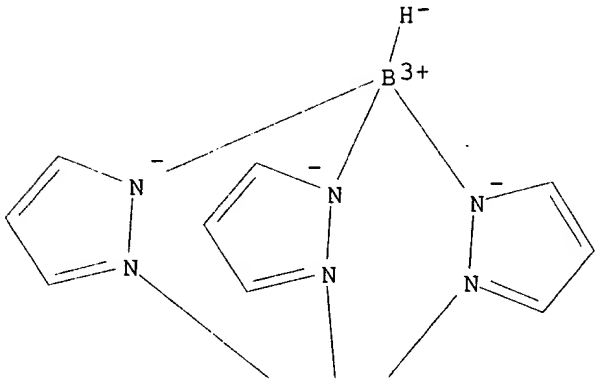
RN 170126-33-7 HCAPLUS
CN Europium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']bis(tetrahydrofuran)- (9CI) (CA INDEX NAME)

PAGE 1-A



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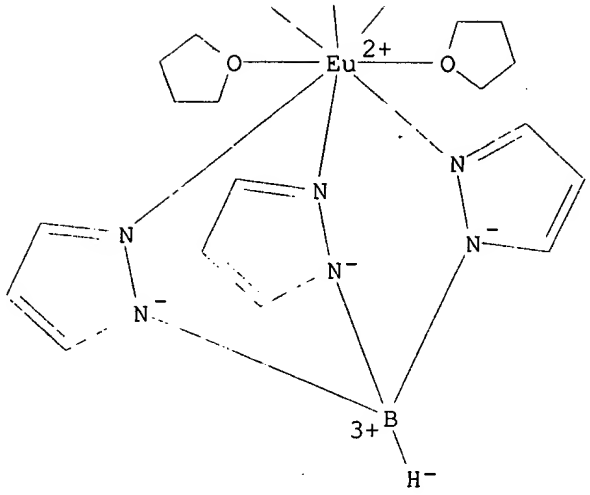

L16 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 2000:227727 HCAPLUS
DN 132:271477
TI Divalent lanthanide metal complexes
IN Christou, Victor; Salata, Oleg Victorovitch; Shipley, Christopher
PA Isis Innovation Limited, UK
SO PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14; C07D231-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000018851	A1	20000406	WO 1999-GB3201	19990924
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RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9961053	A1	20000417	AU 1999-61053	19990924
EP 1115808	A1	20010718	EP 1999-947674	19990924
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI GB 1998-20805	A	19980925		
WO 1999-GB3201	W	19990924		

AB **Light-emitting** devices are described which employ complexes contg. a lanthanide (esp. Eu, Sm or Yb) cation complexed with 1 to 3 polydentate ligands. The polydentate ligands preferably contain

.gtoreq.1 1H-pyrazol-1-yl groups, such as tris(1H-pyrazol-1-yl)borate anions. Selected complexes are claimed, as are methods for prepg. them by reacting the divalent cation with the complex ions in soln. and then sepg. the product from the soln.

ST divalent lanthanide polydentate ligand complex **electroluminescent** device

IT **Electroluminescent** devices
(divalent lanthanide metal complexes with polydentate ligands and their prepn. and **electroluminescent** devices using them)

IT Phosphors
(**electroluminescent**; divalent lanthanide metal complexes with polydentate ligands and their prepn. and **electroluminescent** devices using them)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 150405-69-9, 3-(4-Biphenylyl)-4-phenyl-5-(4-tert-butylphenyl)-1,2,4-triazole
RL: DEV (Device component use); USES (Uses)
(divalent lanthanide metal complexes with polydentate ligands and their prepn. and **electroluminescent** devices using them)

IT **151305-99-6P** 151306-01-3P **171672-52-9P** **263570-02-1P** **263570-55-4P** **263570-62-3P** **263571-07-9P**
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)
(divalent lanthanide metal complexes with polydentate ligands and their prepn. and **electroluminescent** devices using them)

IT 10010-93-2P 121314-30-5P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(divalent lanthanide metal complexes with polydentate ligands and their prepn. and **electroluminescent** devices using them)

IT 367-57-7 7803-57-8, Hydrazine monohydrate 13762-51-1, Potassium borohydride 13874-77-6, Ytterbium dichloride 17567-17-8 84768-84-3 94138-28-0 123882-26-8 157409-94-4
RL: RCT (Reactant)
(divalent lanthanide metal complexes with polydentate ligands and their prepn. and **electroluminescent** devices using them)

RE.CNT 6

RE

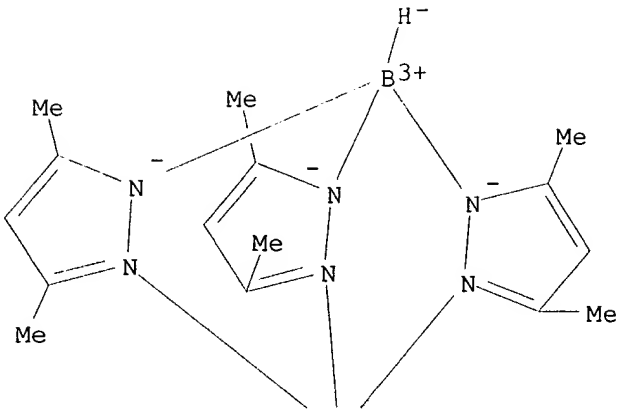
(1) Moss, M; POLYHEDRON 1993, V12(15), P1953 HCAPLUS
(2) Poopathy, K; WO 9858037 A 1998 HCAPLUS
(3) Sano, T; JPN J APPL PHYS, PART 1 1995, V34(4A), P1883 HCAPLUS
(4) Takats, J; JOURNAL OF ALLOYS AND COMPOUNDS V249(1-2), P52 HCAPLUS
(5) Victor, C; WO 9855561 A 1998 HCAPLUS
(6) Zhang, X; J CHEM 1995, V19(5-6), P573 HCAPLUS

IT **151305-99-6P** **171672-52-9P** **263570-02-1P** **263570-55-4P** **263570-62-3P** **263571-07-9P**
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)
(divalent lanthanide metal complexes with polydentate ligands and their prepn. and **electroluminescent** devices using them)

RN 151305-99-6 HCAPLUS

CN Samarium, bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (OC-6-1'1')- (9CI) (CA INDEX NAME)

PAGE 1-A



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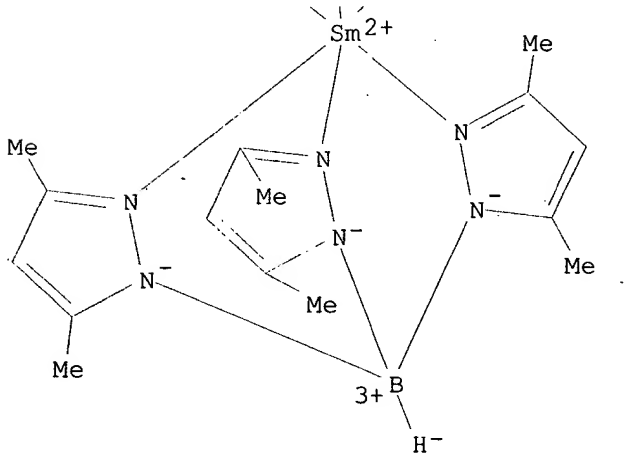

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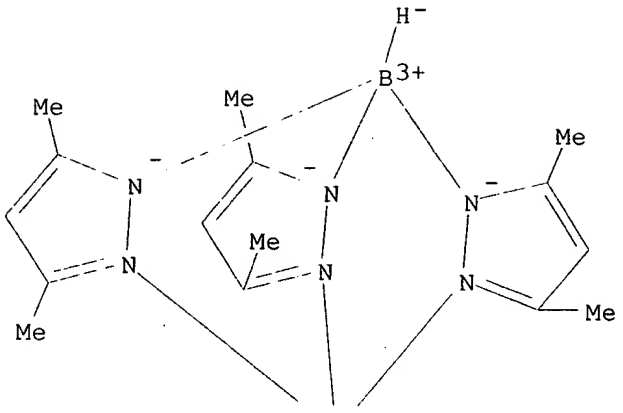
PAGE 1-A



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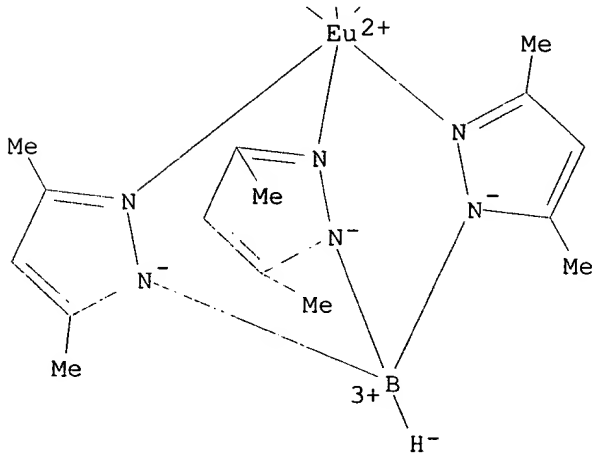
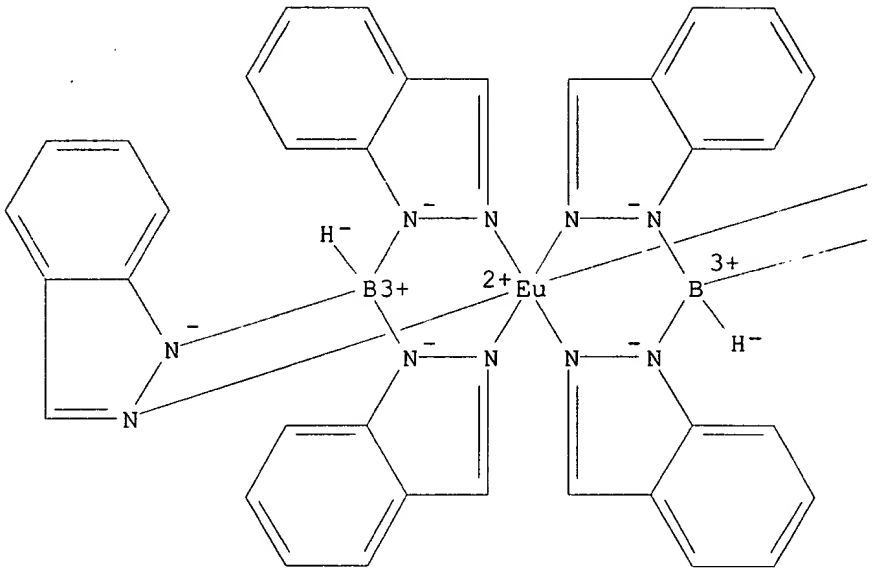


RN 263570-02-1 HCAPLUS
CN Europium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (OC-6-1'1')- (9CI) (CA INDEX NAME)

PAGE 1-A



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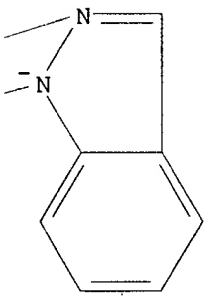

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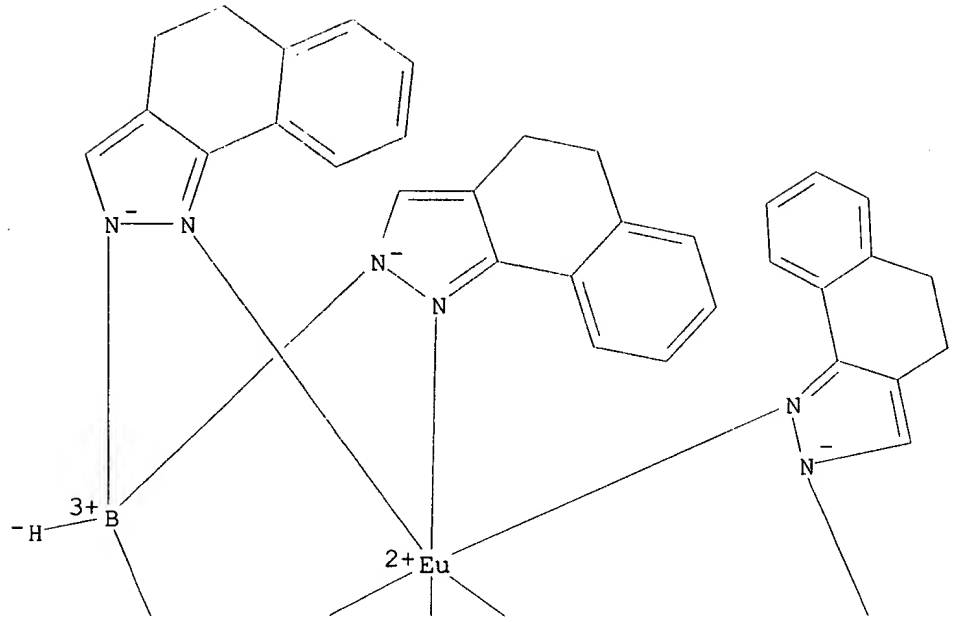
PAGE 1-A



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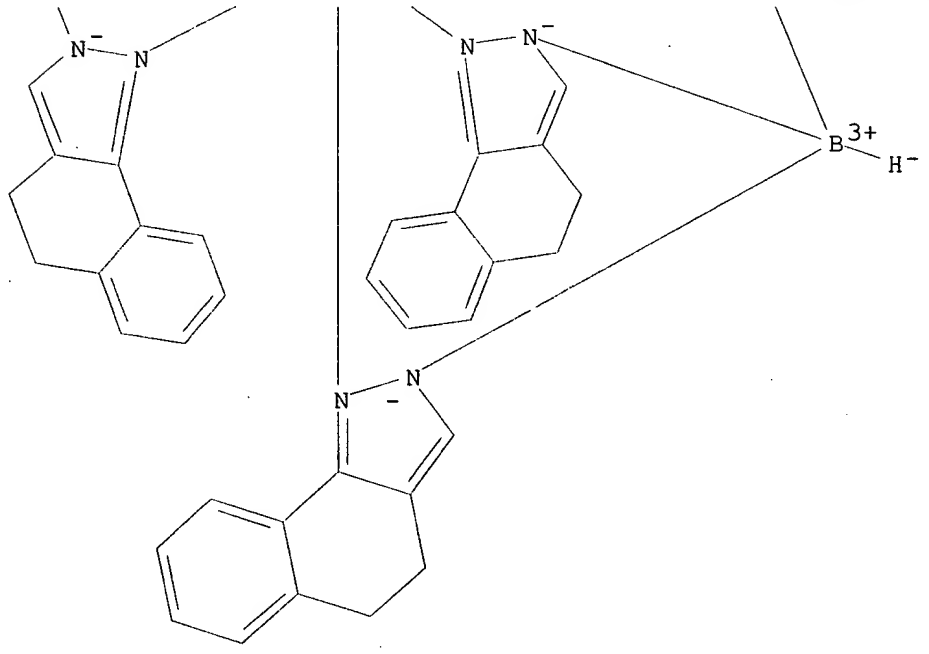

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CN Europium, bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-
.kappa.N2,.kappa.N2',.kappa.N2'']-, (OC-6-1'1')- (9CI) (CA INDEX NAME)

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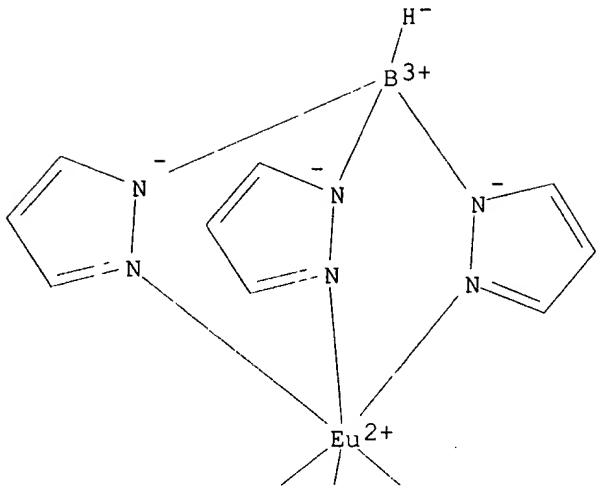

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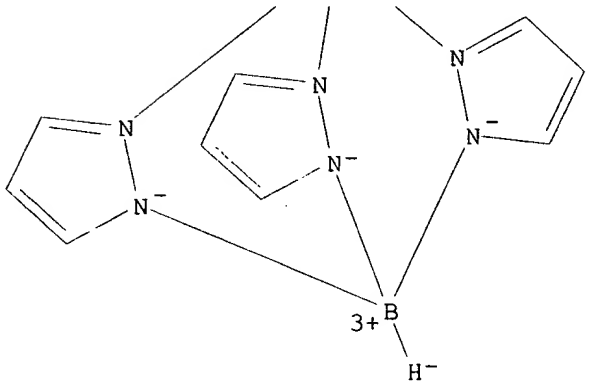
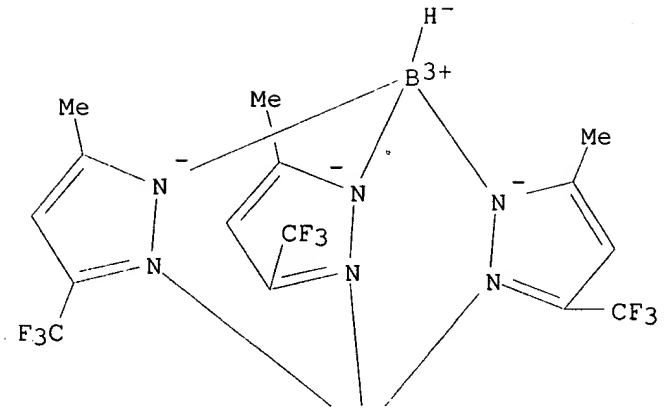


RN 263571-07-9 HCAPLUS
CN Europium, bis[hydrotris[5-methyl-3-(trifluoromethyl)-1H-pyrazolato-.kappa.N1]borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (OC-6-1'1')-(9CI) (CA INDEX NAME)

PAGE 1-A



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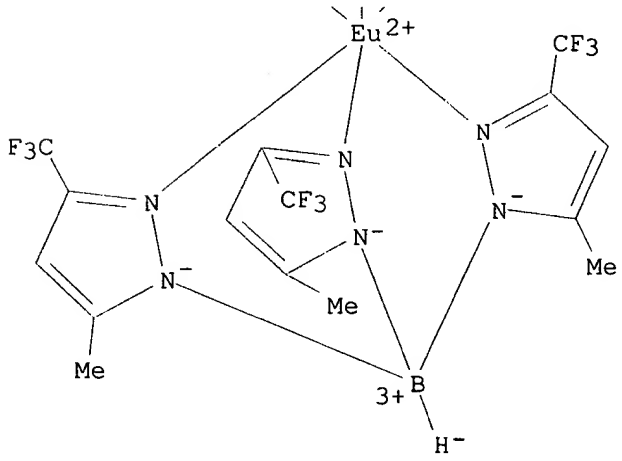

L16 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:720372 HCAPLUS
DN 132:72779
TI Structural and Photophysical Properties of Mononuclear and Dinuclear Lanthanide(III) Complexes of Multidentate Podand Ligands Based on Poly(pyrazolyl)borates
AU Armaroli, Nicola; Accorsi, Gianluca; Barigelletti, Francesco; Couchman, Samantha M.; Fleming, James S.; Harden, Nicholas C.; Jeffery, John C.; Mann, Karen L. V.; McCleverty, Jon A.; Rees, Leigh H.; Starling, Sarah R.;

Ward, Michael D.
CS Istituto di Fotochimica e Radiazioni d'Alta Energia del CNR, Bologna, 40129, Italy
SO Inorg. Chem. (1999), 38(25), 5769-5776
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 73, 75
AB Lanthanide(III) complexes were prepd. with [L1]- [the tetradentate chelating ligand bis{3-(2-pyridyl)pyrazolyl}dihydroborate], [L2]- [the tetradentate chelating ligand bis{3-(2-pyrazinyl)pyrazolyl}dihydroborate], [L3]- [the hexadentate chelating ligand bis[3-{6'-(2,2'-bipyridyl)}pyrazol-1-yl]dihydroborate], and [L4]2- [the 12-dentate compartmental ligand hexakis{3-(2-pyridyl)pyrazol-1-yl}diboran(IV)ate, which has two hexadentate tris(pyrazolyl)borate-based cavities linked back-to-back by a B-B bond]. [Ln(L1)2(NO3)] are 10-coordinate with two tetradentate N-donor ligands and one bidentate nitrate. [Ln(L2)2(NO3)] have 10-coordinate structures similar to those of the [L1]- complexes except that the coordinated N1 of the pyrazine rings is not such a good donor as the pyridine rings in the [L1]- complexes, leading to marked lengthening of these Ln-N bonds. [Ln(L3)(NO3)2] are also 10-coordinate from one hexadentate chelating ligand which has a pseudoequatorial coordination mode and two pseudoaxial bidentate nitrate ligands; the hexadentate ligand has a shallow helical twist to prevent steric interference between its ends. Finally [{Ln(NO3)2}2(L4)] are dinuclear, with each metal center being 10-coordinate from a tripodal hexadentate ligand cavity and two bidentate nitrates. Five complexes were structurally characterized: [Tb(L2)2(NO3)].cntdot.DMF is monoclinic (space group P21/c) with a 14.881(3), b 15.5199(12), c 15.845(2) .ANG., .beta. 92.387(12).degree., and Z = 4. [Gd(L2)2(NO3)].cntdot.DMF is monoclinic (space group P21/c) with a 14.926(2), b 15.465(2), c 15.878(2) .ANG., .beta. 92.698(11).degree., and Z = 4. [Eu(L3)(NO3)2].cntdot.DMF.cntdot.0.5Et2O is triclinic (P.hivin.1) with a 10.020(3), b 13.036(3), c 14.740(3) .ANG., .alpha. 70.114(14), .beta. 71.55(2), .gamma. 79.66(2).degree., and Z = 2. [{La(NO3)(DMF)2}2(L4)](NO3)2.cntdot.DMF is orthorhombic (Pbca) with a 18.813(2), b 15.241(2), c 27.322(2) , and Z = 4. [{Gd(NO3)2}2(L4)].cntdot.2.4DMF is tetragonal (P42/n) with a 16.622(6), c 24.19(5) .ANG., and Z = 4. Detailed photophys. studies were performed on the free ligands and their complexes with Gd(III), Eu(III), and Tb(III) in several solvents. The results show a wide range in the emission properties of the complexes which can be rationalized in terms of subtle variations in the steric and electronic properties of the ligands. In particular the dinuclear Tb(III) complex of [L4]2- has an emission quantum yield of .apprx.0.5 in D2O and MeOD.
ST crystal structure lanthanide polypyrazolylborate multidentate podand nitrato; lanthanide polypyrazolylborate multidentate podand nitrato prepn; photophys property lanthanide polypyrazolylborate multidentate podand nitrato; **luminescence** lanthanide polypyrazolylborate multidentate podand nitrato
IT Crystal structure
Luminescence
Molecular structure
(of lanthanide poly(pyrazolyl)borate-based multidentate podand nitrato complexes)
IT Podands
RL: PRP (Properties); RCT (Reactant)
(photophys. properties of poly(pyrazolyl)borate-based multidentate podands and their complexes with lanthanide(III))

IT Rare earth complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(poly(pyrazolyl)borate; prepn., structure, and photophys. properties of lanthanide poly(pyrazolyl)borate-based multidentate podand nitrato complexes)
IT 188606-26-0 192885-45-3 212397-25-6 226876-49-9
RL: PRP (Properties); RCT (Reactant)
(complexation with lanthanide(III) and photophys. properties of)
IT **253150-94-6P 253151-01-8P 253151-07-4P**
253151-15-4P **253151-23-4P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure of)
IT **192885-29-3P 205534-50-5P 253150-66-2P**
253150-68-4P 253150-69-5P 253150-73-1P
253150-75-3P 253150-85-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and photophys. properties of)
IT 253150-74-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and solvation in DMF)
IT **212397-22-3P 253150-70-8P 253150-71-9P**
253150-72-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. structure, and photophys. properties of)
RE.CNT 39
RE
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IT **253150-94-6P 253151-01-8P 253151-07-4P**
253151-23-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure of)

RN 253150-94-6 HCAPLUS

CN Terbium, bis[dihydrobis[(1H-pyrazol-3-yl-.kappa.N1)pyrazinato]borato(1-)](nitrato-.kappa.O,.kappa.O')-, compd. with N,N-dimethylformamide (1:1) (9CI) (CA INDEX NAME)

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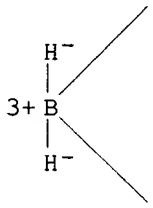
CRN 253150-71-9
CMF C28 H24 B2 N17 O3 Tb
CCI CCS

PAGE 1-A



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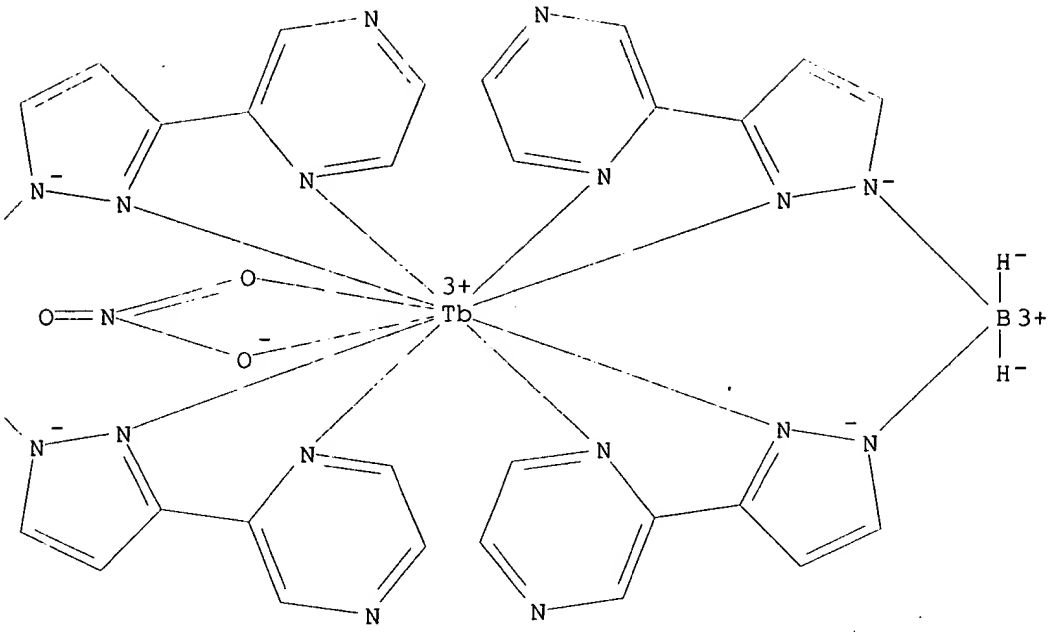

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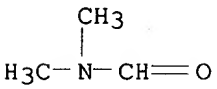

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CN Gadolinium, bis[dihydrobis[(1H-pyrazol-3-yl-.kappa.N1)pyrazinato]borato(1-)](nitrato-.kappa.O,.kappa.O')-, compd. with N,N-dimethylformamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 253150-70-8
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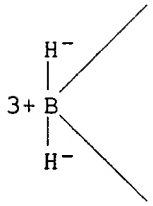
CCI CCS

PAGE 1-A



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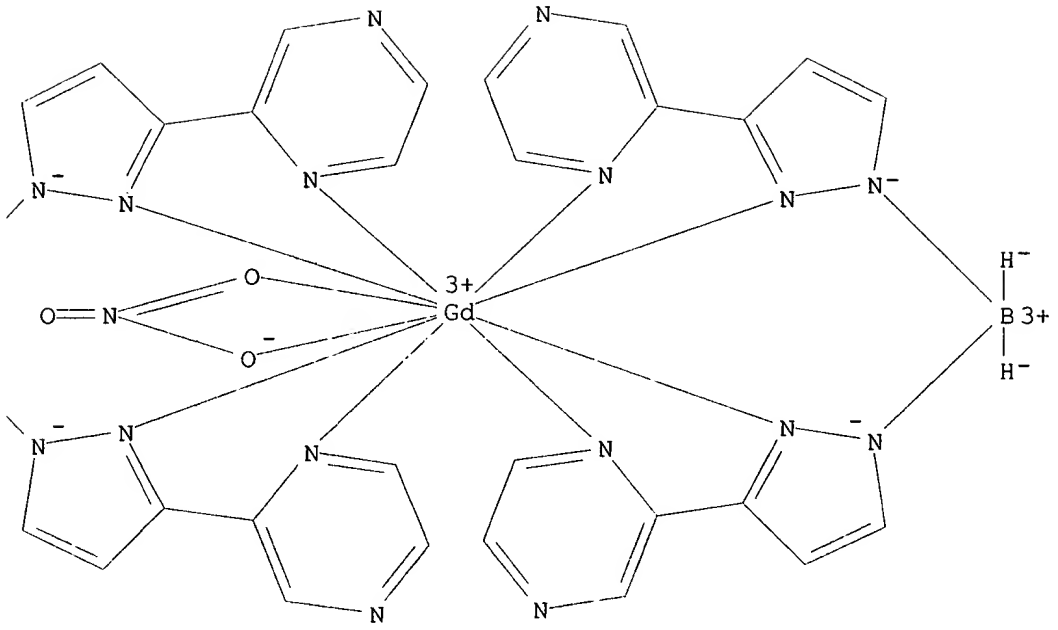
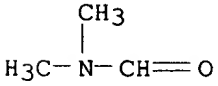


CM 2

CRN 68-12-2
CMF C3 H7 N O



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CN Europium, bis(nitrato-.kappa.O,.kappa.O')[dihydrobis[6-(1H-pyrazol-3-yl-.kappa.N1)-2,2'-bipyridinato]borato(1-)]-, compd. with N,N-dimethylformamide and 1,1'-oxybis[ethane] (2:2:1) (9CI) (CA INDEX NAME)

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CRN 253150-72-0
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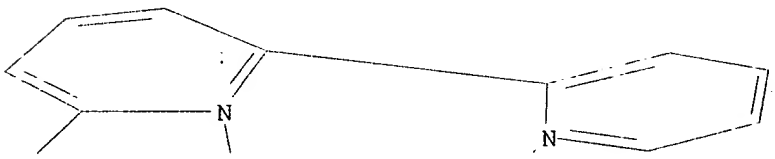
CCI CCS

PAGE 1-A



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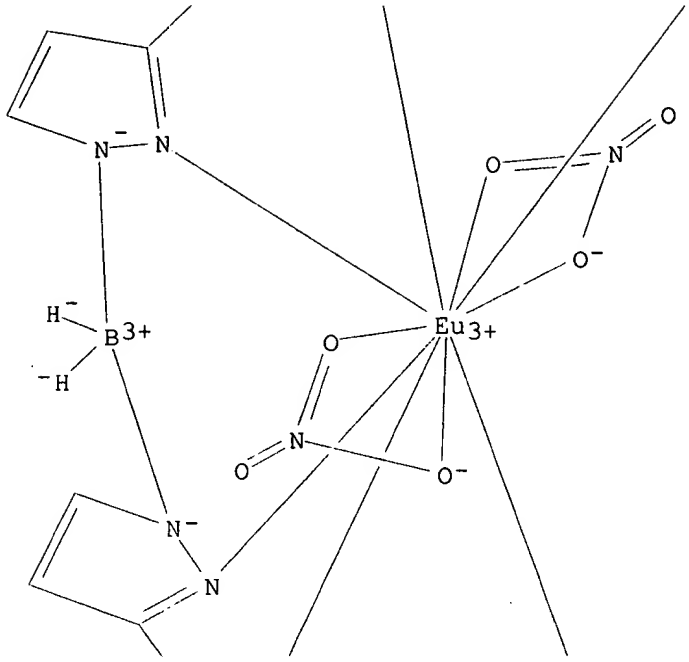

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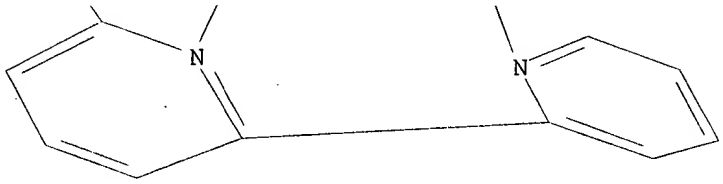

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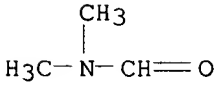
CRN 68-12-2
CMF C3 H7 N O



CM 3

CRN 60-29-7
CMF C4 H10 O

$H_3C-CH_2-O-CH_2-CH_3$

RN 253151-23-4 HCAPLUS
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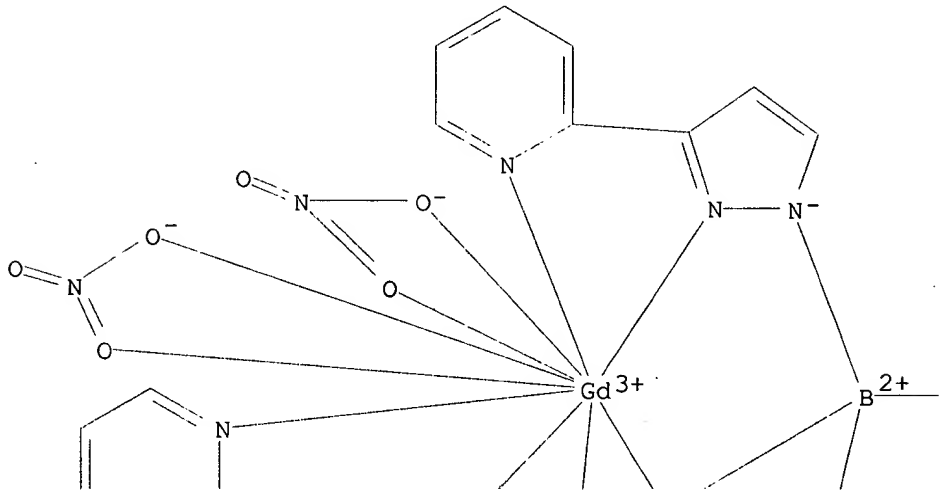
CM 1

CRN 212397-22-3
CMF C48 H36 B2 Gd2 N22 O12
CCI CCS

PAGE 1-A



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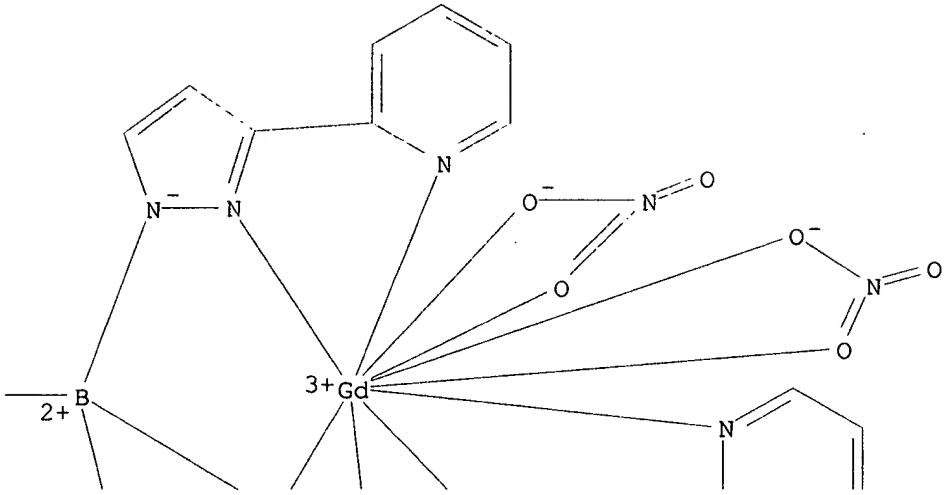

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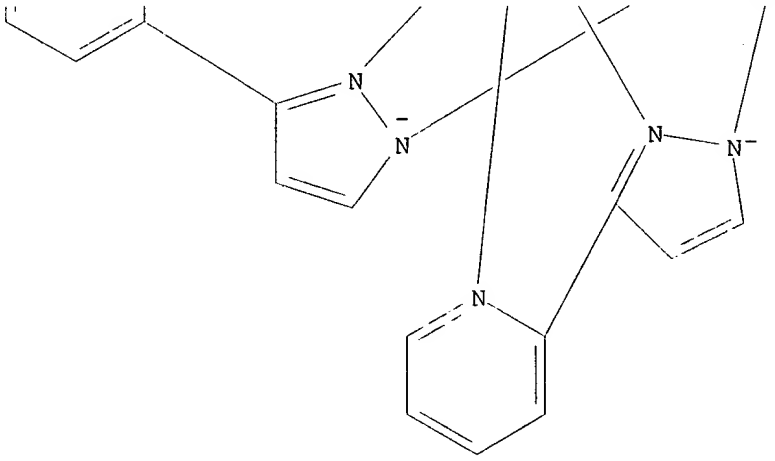

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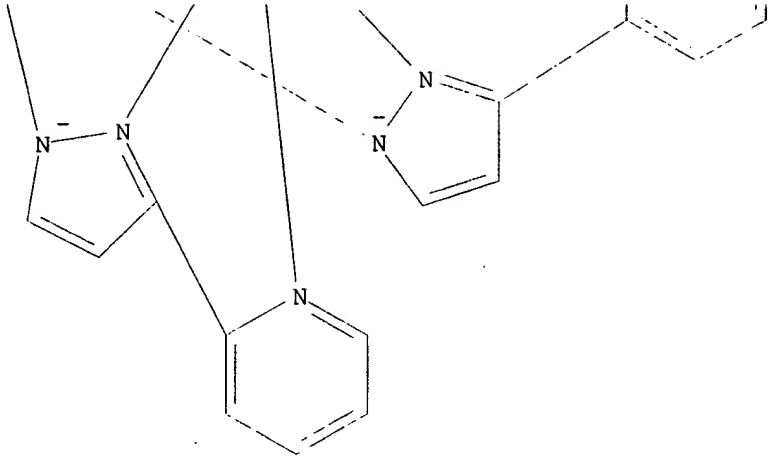

CM 2

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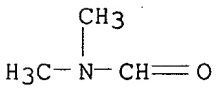
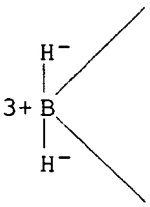


IT **192885-29-3P 205534-50-5P 253150-66-2P**
253150-68-4P 253150-69-5P 253150-73-1P
253150-75-3P 253150-85-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and photophys. properties of)
RN 192885-29-3 HCAPLUS
CN Terbium, bis[dihydrobis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)](nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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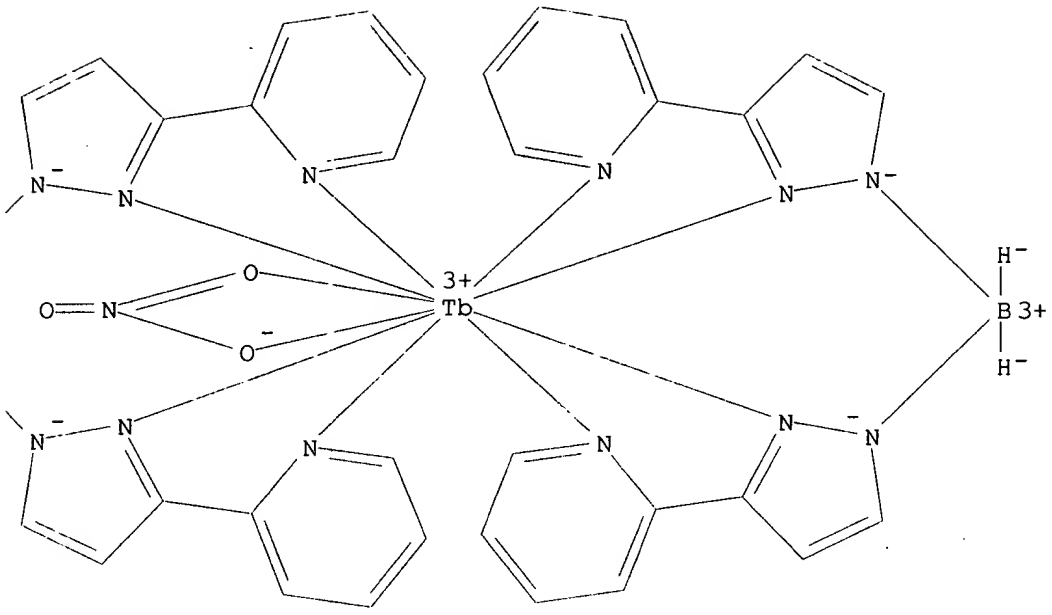

RN 205534-50-5 HCAPLUS
CN Gadolinium, [dihydrobis[6-(1H-pyrazol-3-yl-.kappa.N1)-2,2'-bipyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

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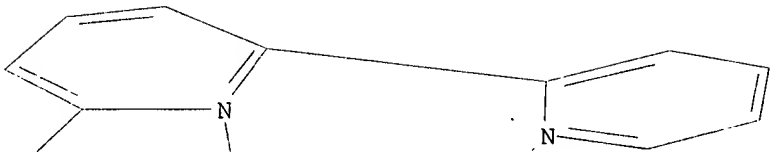

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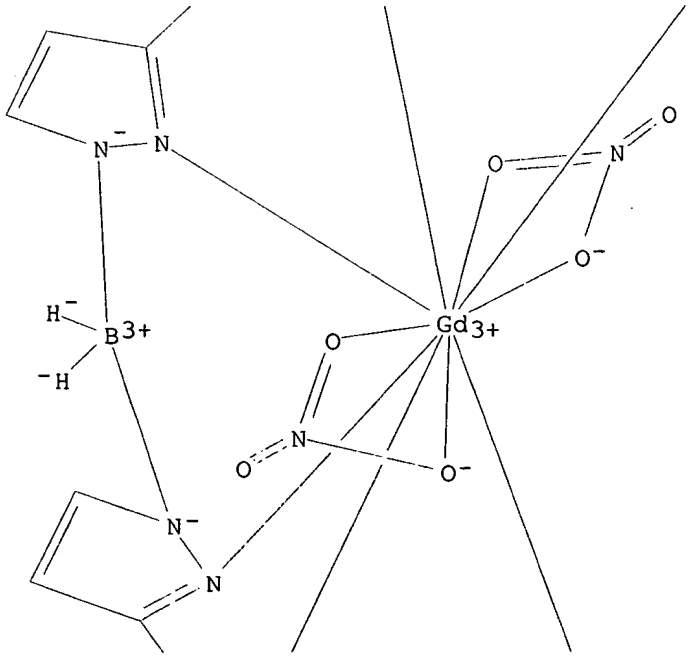

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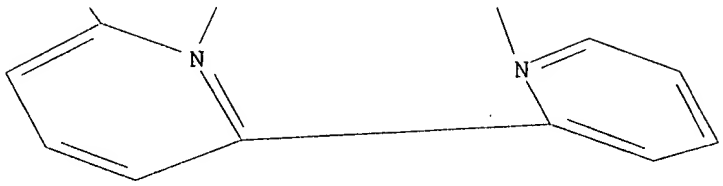
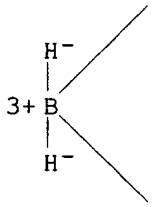


RN 253150-66-2 HCAPLUS
CN Europium, bis[dihydrobis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)](nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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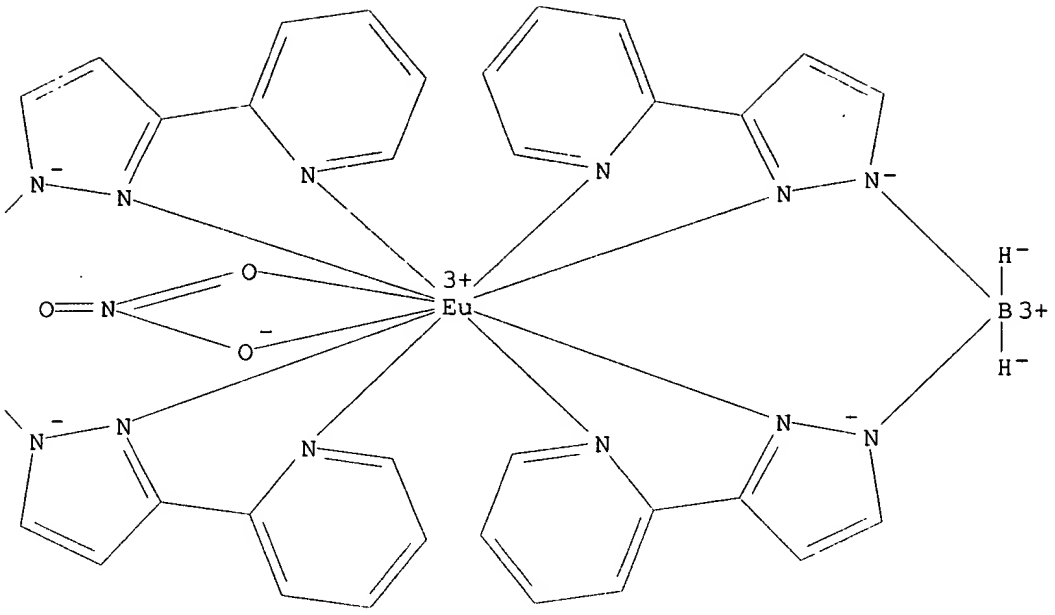
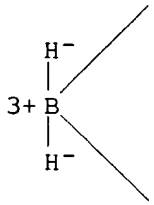


RN 253150-68-4 HCAPLUS
CN Gadolinium, bis[dihydrobis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)](nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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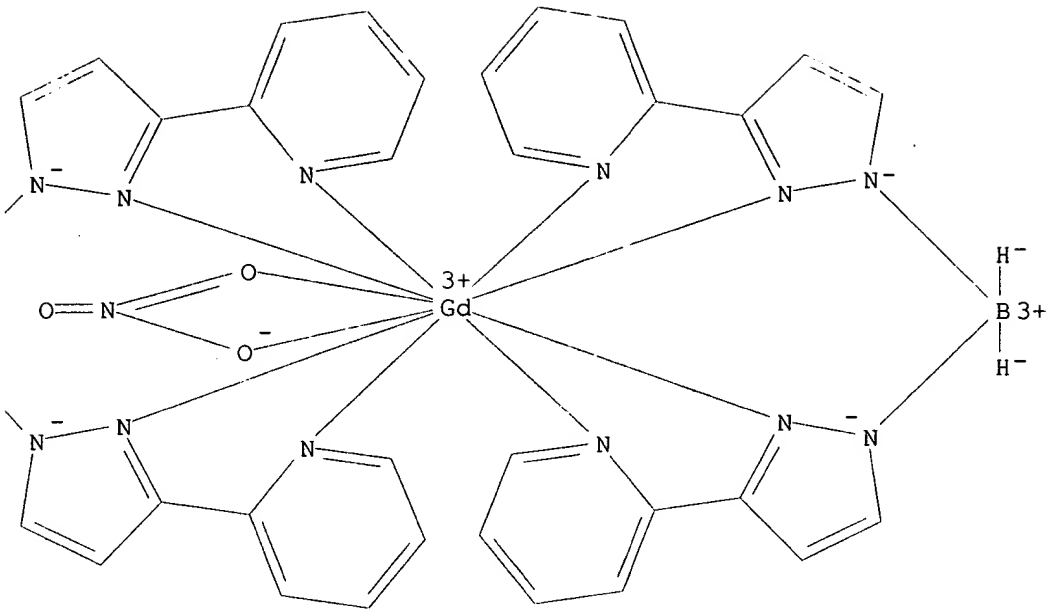
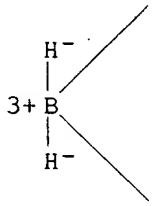


RN 253150-69-5 HCAPLUS
CN Europium, bis[dihydrobis[(1H-pyrazol-3-yl-.kappa.N1)pyrazinato]borato(1-)](nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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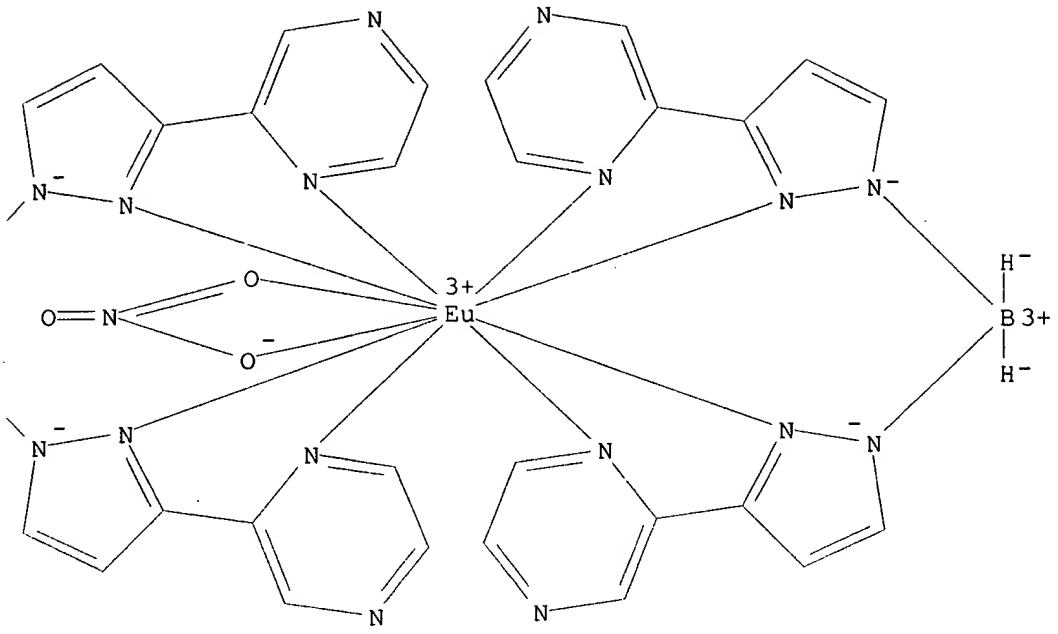

RN 253150-73-1 HCAPLUS
CN Terbium, [dihydrobis[6-(1H-pyrazol-3-yl-.kappa.N1)-2,2'-bipyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

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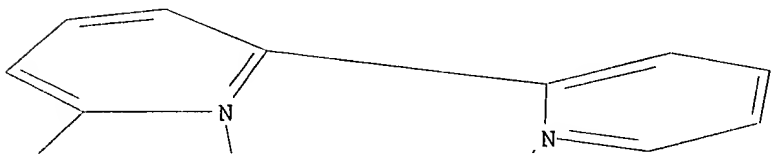

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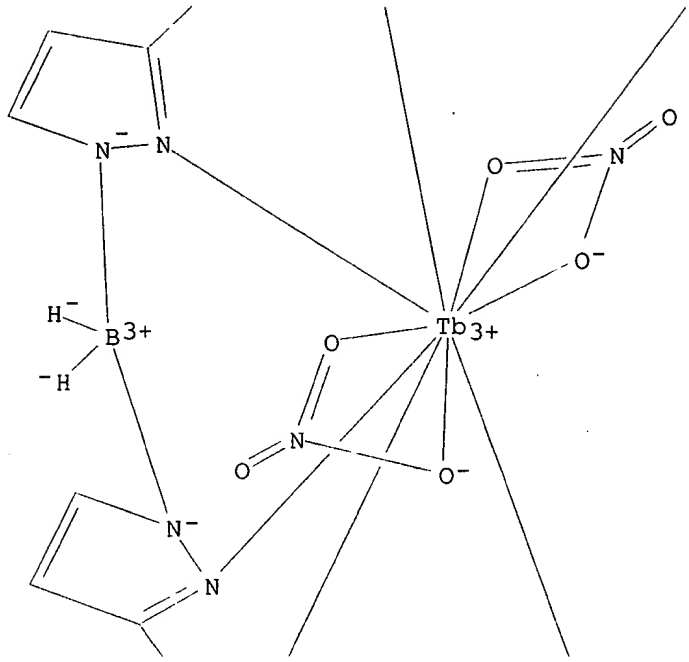

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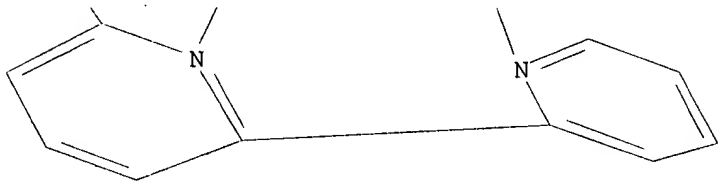
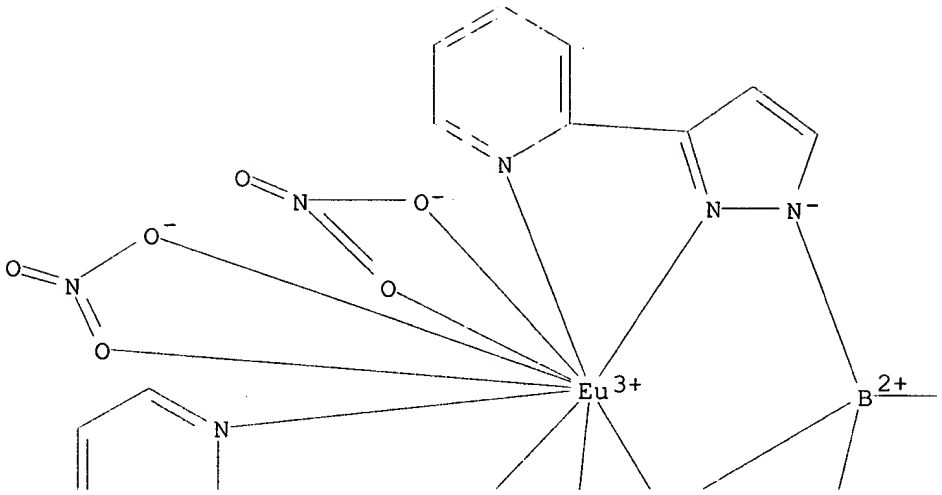


RN 253150-75-3 HCAPLUS
CN Europium, [.mu.-[hexakis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]diborato(2-)]]tetrakis(nitrato-.kappa.O,.kappa.O')di- (9CI) (CA INDEX NAME)

PAGE 1-A



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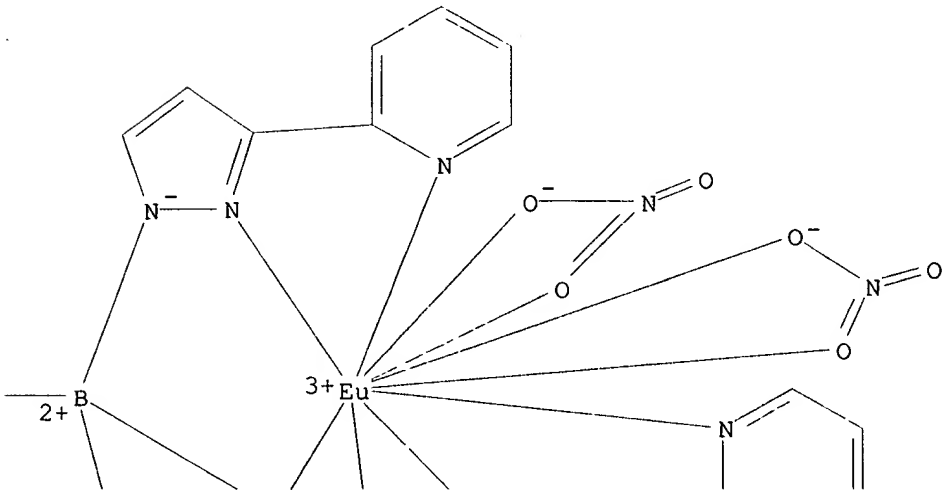

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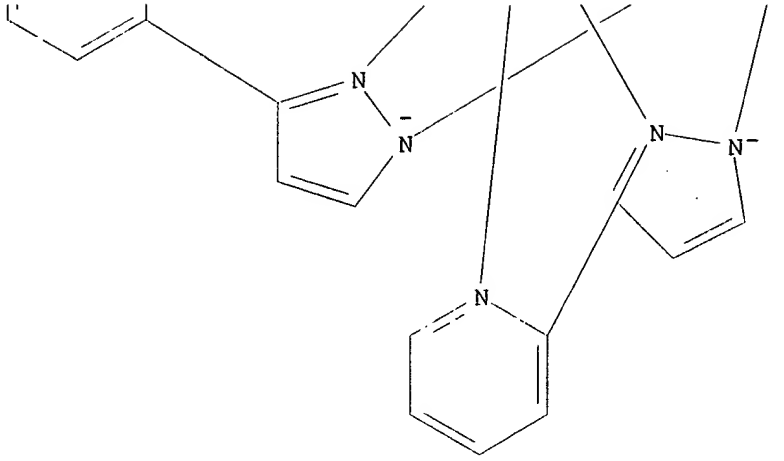

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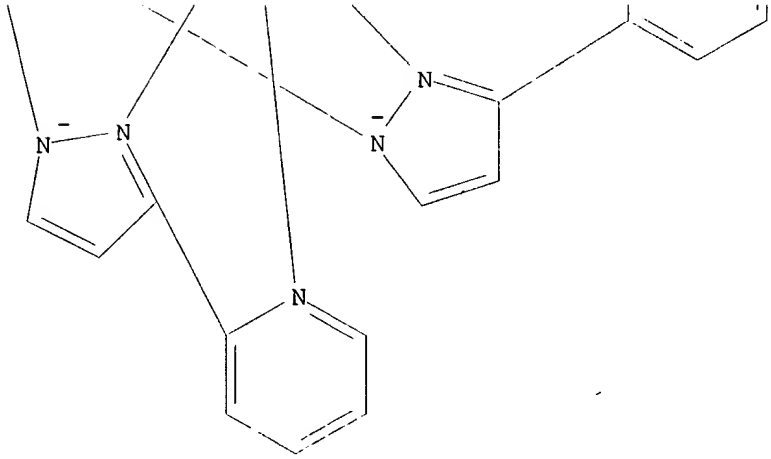

RN 253150-85-5 HCAPLUS
CN Terbium, [.mu.-[hexakis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]diborato(2-)]]tetrakis(nitrato-.kappa.O,.kappa.O')di- (9CI) (CA INDEX NAME)

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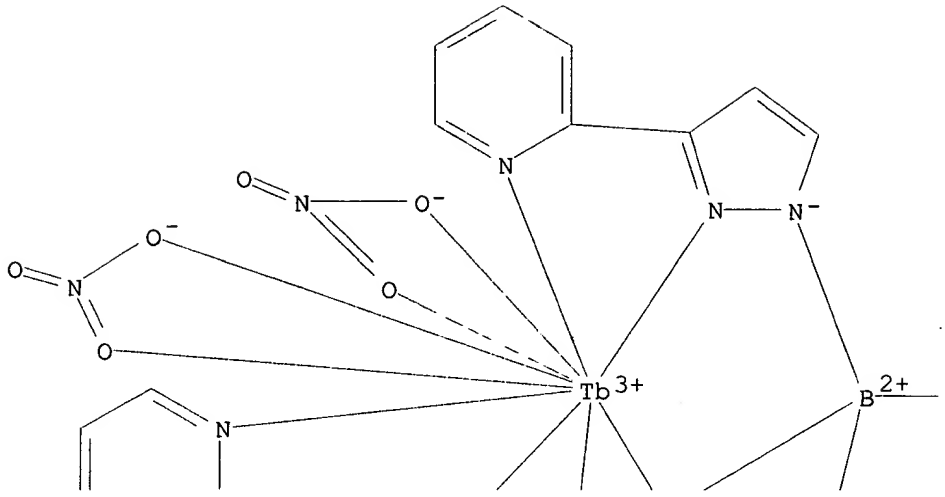

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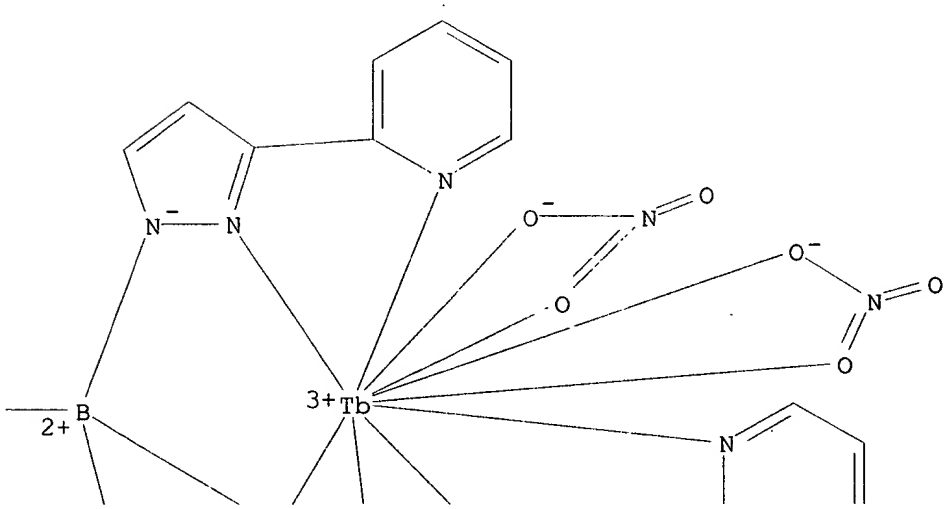

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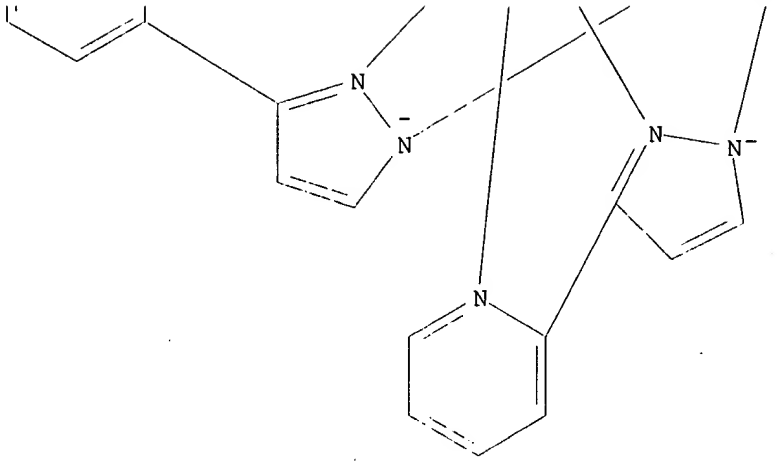

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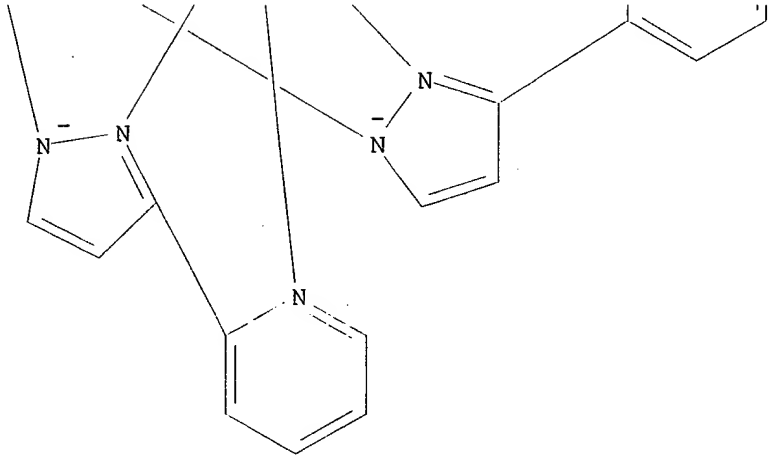
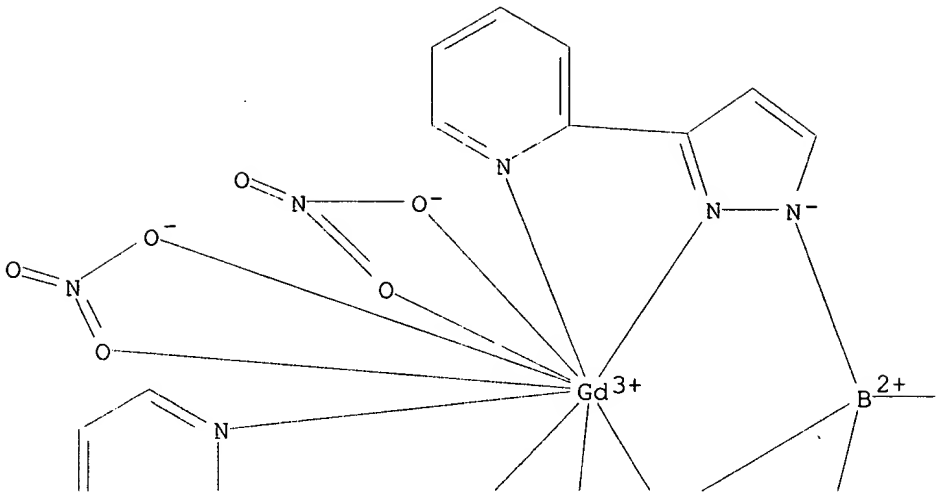


IT **212397-22-3P 253150-70-8P 253150-71-9P**
253150-72-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. structure, and photophys. properties of)
RN 212397-22-3 HCAPLUS
CN Gadolinium, [.mu.-[hexakis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]diborato(2-)]]tetrakis(nitrato-.kappa.O,.kappa.O')di- (9CI) (CA INDEX NAME)

PAGE 1-A



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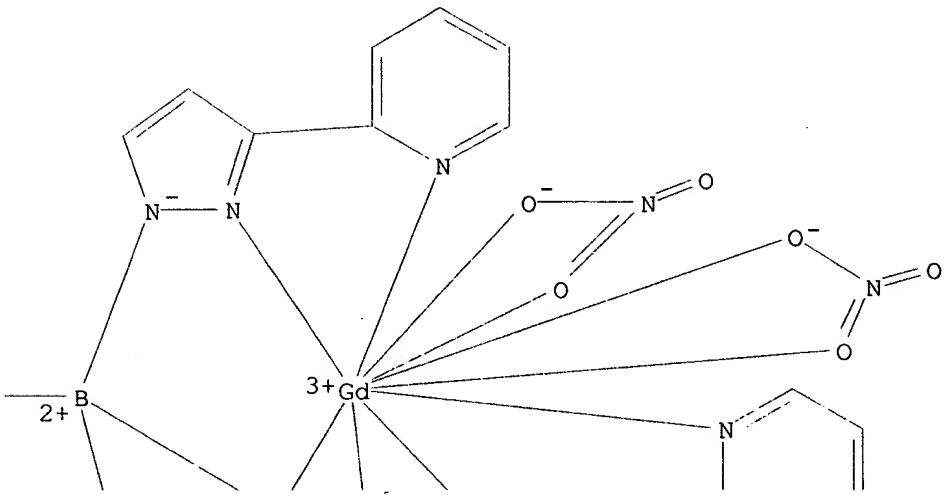

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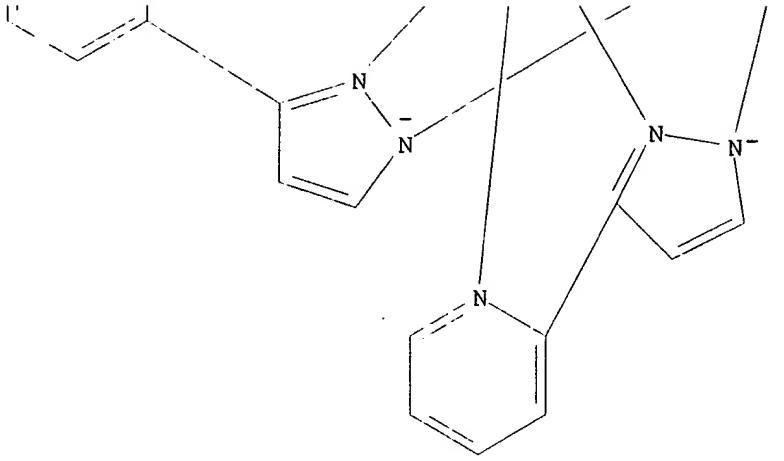

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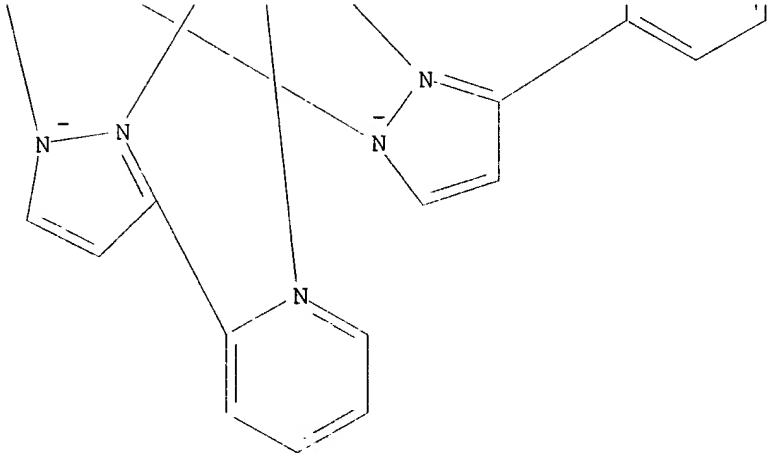
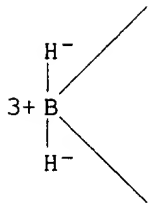


RN 253150-70-8 HCAPLUS
CN Gadolinium, bis[dihydrobis[(1H-pyrazol-3-yl-.kappa.N1)pyrazinato]borato(1-)](nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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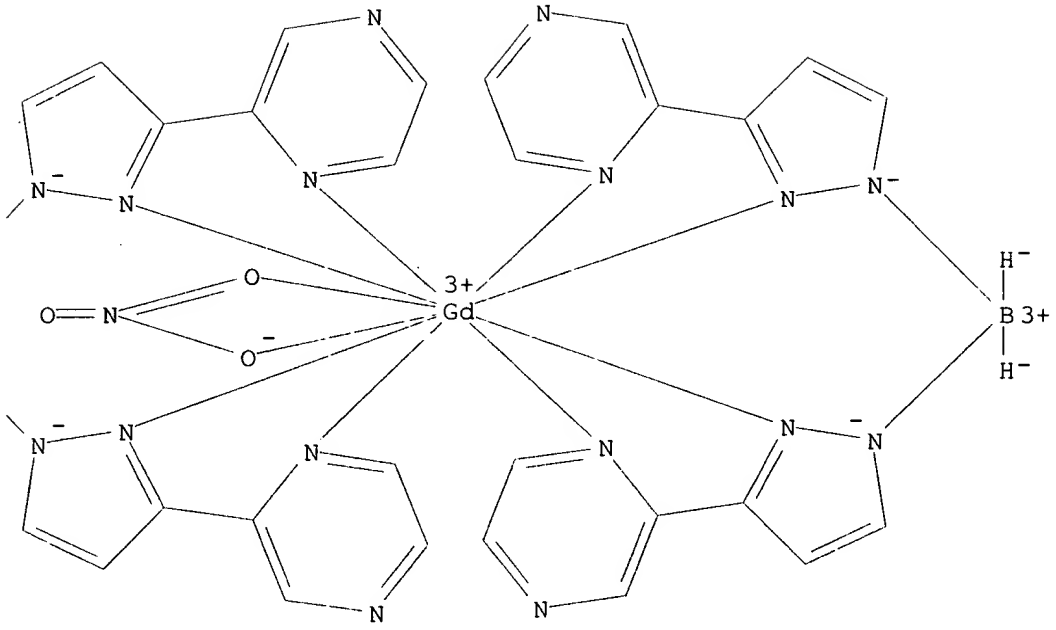
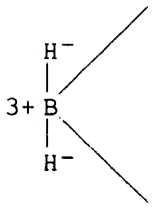


RN 253150-71-9 HCAPLUS
CN Terbium, bis[dihydrobis[(1H-pyrazol-3-yl-.kappa.N1)pyrazinato]borato(1-)](nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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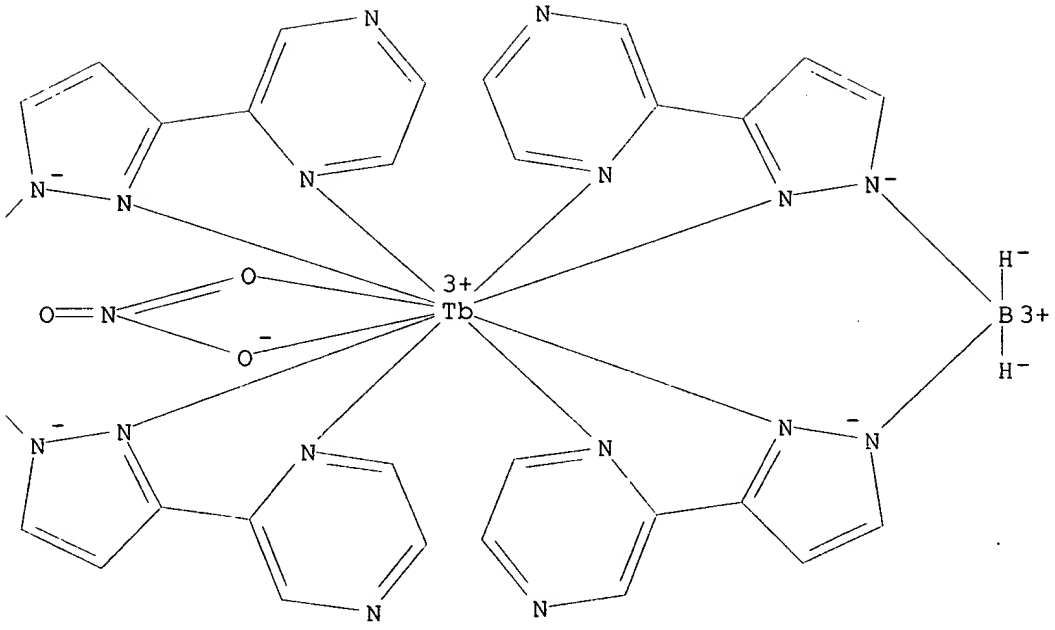

RN 253150-72-0 HCAPLUS
CN Europium, [dihydrobis[6-(1H-pyrazol-3-yl-.kappa.N1)-2,2'-bipyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

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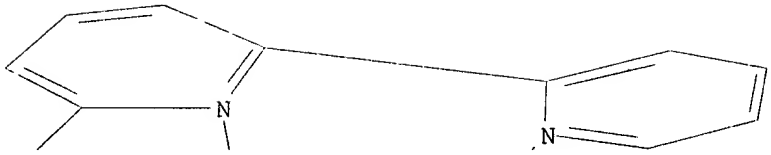

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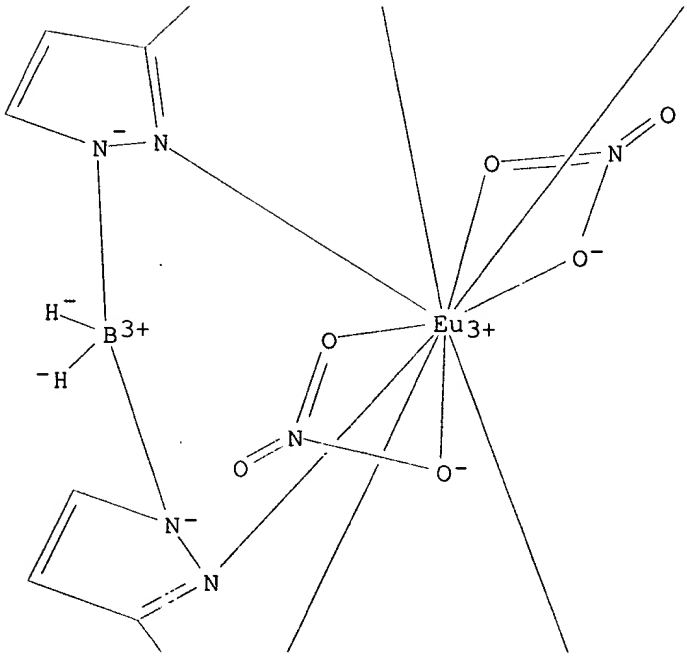

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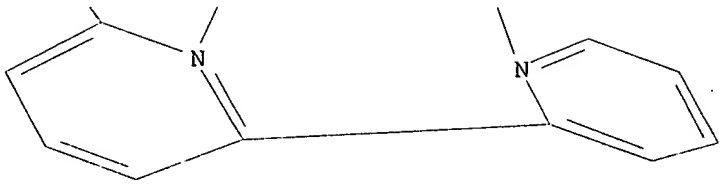

L16 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:327093 HCAPLUS
DN 131:25525
TI Orange **electroluminescence** from a divalent europium complex
AU Shipley, Christopher P.; Capecchi, Simone; Salata, Oleg V.; Etchells, Mark; Dobson, Peter J.; Christou, Victor
CS Inorganic Chemistry Laboratory, Department Chemistry, University Oxford, Oxford, OX1 3QR, UK
SO Adv. Mater. (Weinheim, Ger.) (1999), 11(7), 533-536
CODEN: ADVMEW; ISSN: 0935-9648
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78
AB A thin-film **electroluminescent** (**EL**) device based on a divalent mol. Eu complex was prepd. by CVD of **luminescent** Tp2Eu (bis(tris(dimethylpyrazolyl)borate)europium(II)) as org. layer on ITO-coated glass. The Tp2Eu complex exhibited bright orange **photoluminescence** (PL) with a high PL quantum efficiency in the solid state. The volatility of the compd. enabled the prepn. of multilayer **EL** devices with a sandwich structure, in which the org. layer was embedded between an electron transporting layer and a hole transporting layer. Thin film **EL** devices with this structure showed visible emission comparable to the PL spectrum of the pure Eu complex.
ST europium methylpyrazolylborate complex prepn **electroluminescent** device fabrication
IT **Electroluminescent** devices
(fabrication with europium tris(dimethylpyrazolyl)borate complex)
IT **Luminescence**
Luminescence, **electroluminescence**
UV and visible spectra
(of europium tris(dimethylpyrazolyl)borate complex)
IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 65181-78-4, TPD 150405-69-9, TAZ
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** device fabrication with europium methylpyrazolylborate complex and)
IT **171672-52-9P**
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. and UV absorption and **luminescence** and **electroluminescence** and **electroluminescent** device fabrication with)
IT 17567-17-8
RL: RCT (Reactant)

(reaction with europium iodo THF complex in prepn. of europium tris(dimethylpyrazolyl)borate complex)

RE.CNT 29

RE

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IT **171672-52-9P**

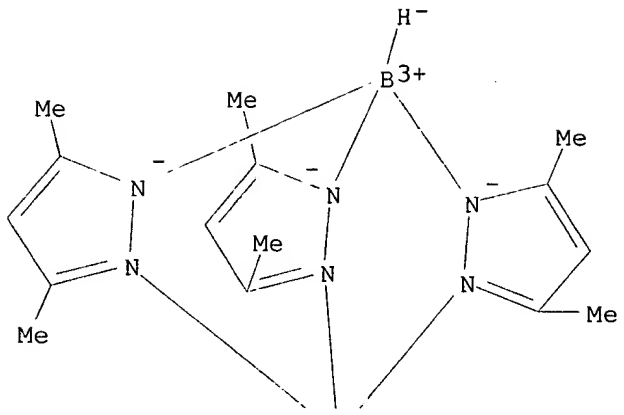
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(prepn. and UV absorption and **luminescence** and **electroluminescence** and **electroluminescent** device fabrication with)

RN 171672-52-9 HCAPLUS

CN Europium, bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (OC-6-1'1')- (9CI) (CA INDEX NAME)

PAGE 1-A



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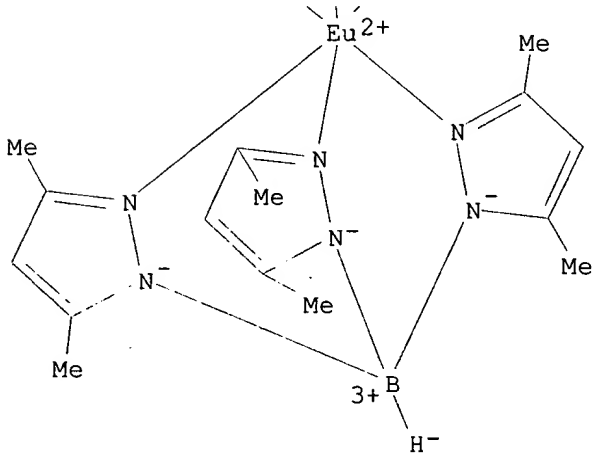

L16 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:141492 HCAPLUS
DN 130:261027
TI Heteroleptic poly(pyrazol-1-yl)borate derivatives of the lanthanides. The syntheses of picolinate-N-oxide complexes and the x-ray crystal structure of [Tb{HB(C3H3N2)3}2(ONC5H4CO2-2)]
AU Lawrence, Royston G.; Jones, Christopher J.; Kresinski, Roman A.
CS School of Chemistry, University of Birmingham, Birmingham, B15 2TT, UK
SO Inorg. Chim. Acta (1999), 285(2), 283-289

CODEN: ICHAA3; ISSN: 0020-1693
PB Elsevier Science S.A.
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 73, 75
AB [Ln(Tp)2(pnx)] {Ln = Y, Eu, Gd, Tb, Er, Yb or Lu; Tp- = hydrotris(pyrazol-1-yl)borate, pnxH = picolinic acid N-oxide} were synthesized and characterized. The complexes which contain Eu or Tb are emissive upon ligand excitation and substantially larger intensities of emission are assocd. with excitation of the pnx- ligand than with excitation of the Tp- ligand. The solid state structure (monoclinic, space group P21/a, R1 = 4.21%) of [Tb(Tp)2(pnx)] shows the complex to be eight-coordinate and monomeric, contg. a pnx- co-ligand chelating via one N-oxide oxygen and one carboxylate oxygen. The geometry around the Tb3+ ion is distorted square antiprismatic with a steric angle sum of 0.79.
ST crystal structure terbium hydridotrispyrazolylborato picolinate oxide complex; terbium hydridotrispyrazolylborato picolinate oxide complex prepn structure **luminescence**; rare earth hydridotrispyrazolylborate picolinate oxide complex prepn structure **luminescence**; borate hydridotrispyrazolyl rare earth picolinate oxide prepn structure **luminescence**; pyrazolylborate hydridotris rare earth picolinate oxide prepn structure **luminescence**
IT **Luminescence**
(of rare earth hydridotris(pyrazolyl)borato picolinate oxide heteroleptic complexes)
IT Crystal structure
Molecular structure
(of terbium hydridotris(pyrazolyl)borato picolinate oxide heteroleptic complex)
IT Rare earth amine complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(poly(pyrazolyl)borate; prepn., crystal structure and **luminescence** of rare earth hydridotris(pyrazolyl)borato picolinate oxide heteroleptic complexes)
IT 824-40-8, Picolinic acid N-oxide 18583-60-3, Potassium hydrotris(pyrazol-1-yl)borate
RL: RCT (Reactant)
(for prepn. of rare earth hydridotris(pyrazolyl)borato picolinate oxide heteroleptic complexes)
IT **221457-36-9P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and **luminescence**)
IT 221457-35-8P **221457-37-0P 221457-39-2P** 221457-40-5P
221457-41-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT **221457-38-1P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure and **luminescence**)
RE.CNT 31
RE
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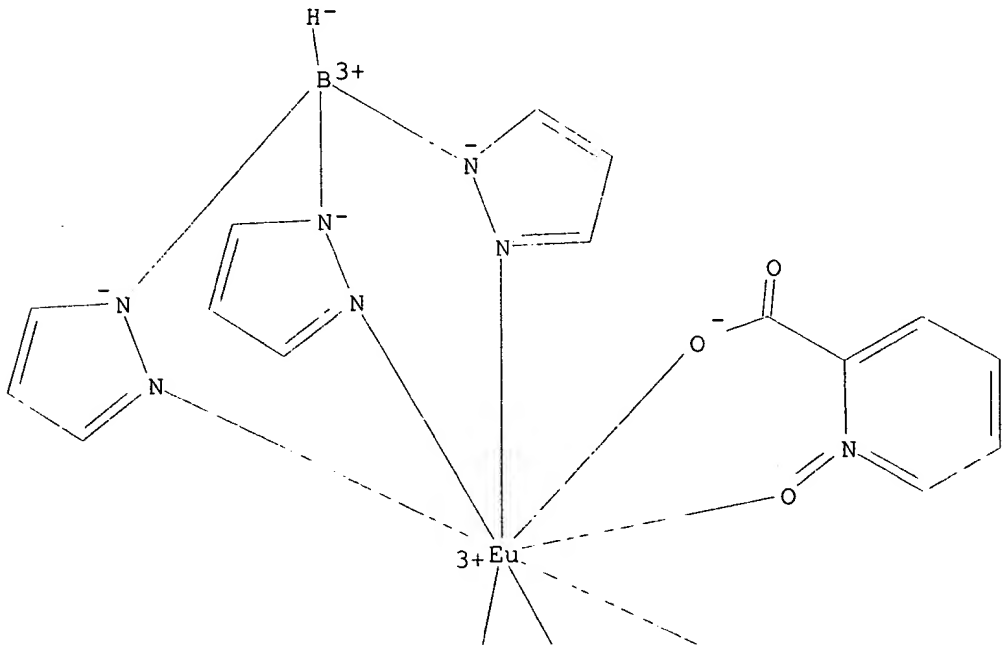
IT **221457-36-9P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and **luminescence**)

RN 221457-36-9 HCAPLUS

CN Europium, bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2''][(2-pyridinecarboxylic acid-.kappa.O2)1-(oxidato-.kappa.O)]- (9CI) (CA INDEX NAME)

PAGE 1-A



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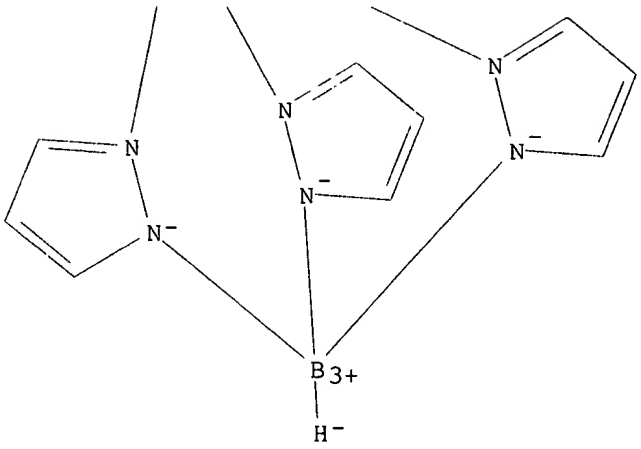
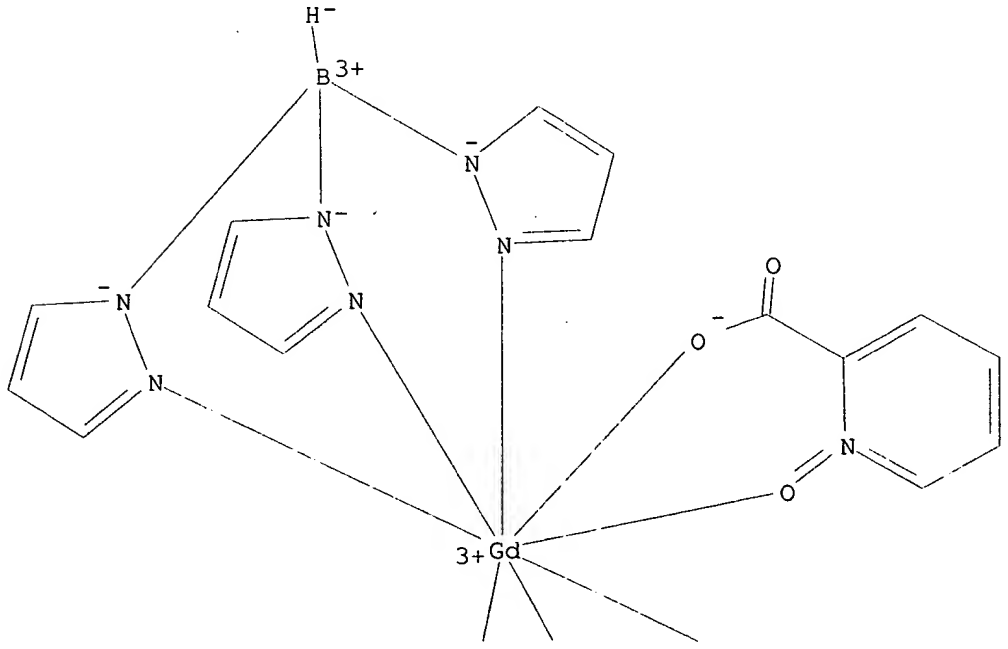


IT **221457-37-0P 221457-39-2P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 221457-37-0 HCAPLUS
CN Gadolinium, bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-
.kappa.N2,.kappa.N2',.kappa.N2'']1-(oxidato-.kappa.O)]- (9CI) (CA INDEX NAME)

PAGE 1-A



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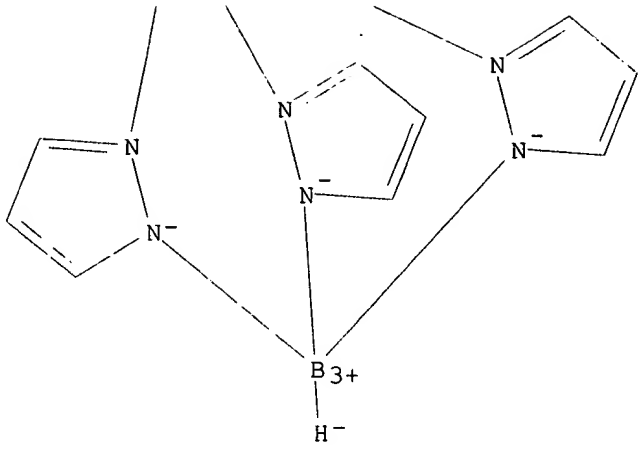
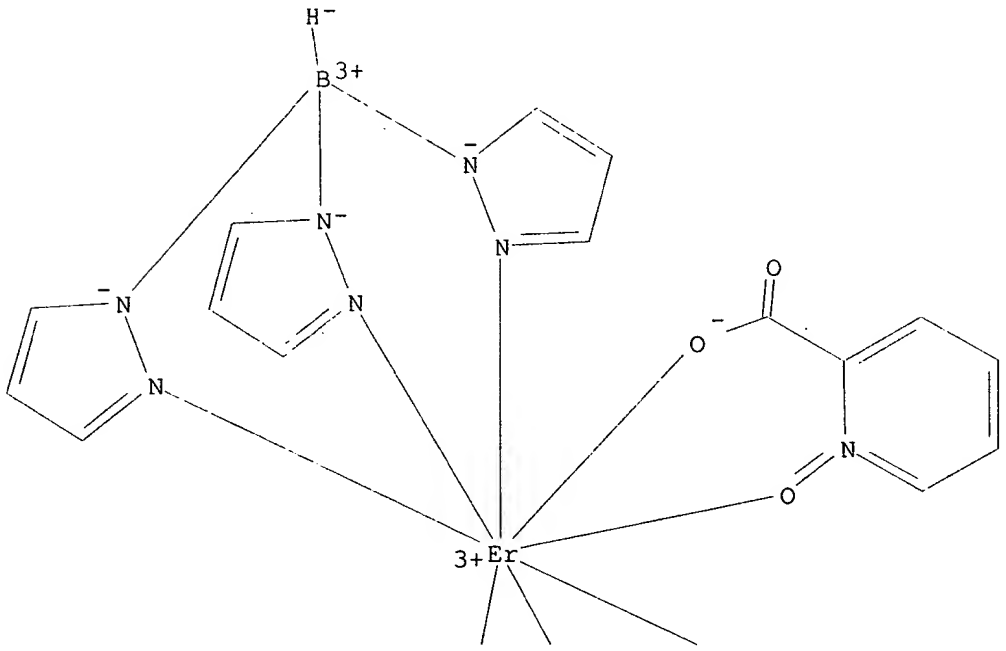


RN 221457-39-2 HCAPLUS
CN Erbium, bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-
.kappa.N2,.kappa.N2',.kappa.N2''][(2-pyridinecarboxylic acid-.kappa.O2)
1-(oxidato-.kappa.O)]- (9CI) (CA INDEX NAME)

PAGE 1-A



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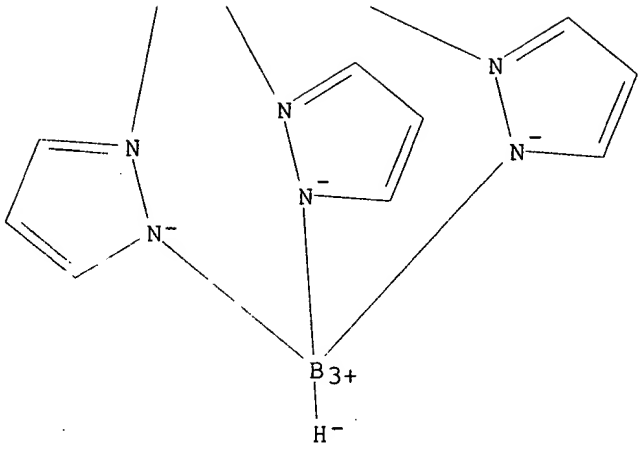
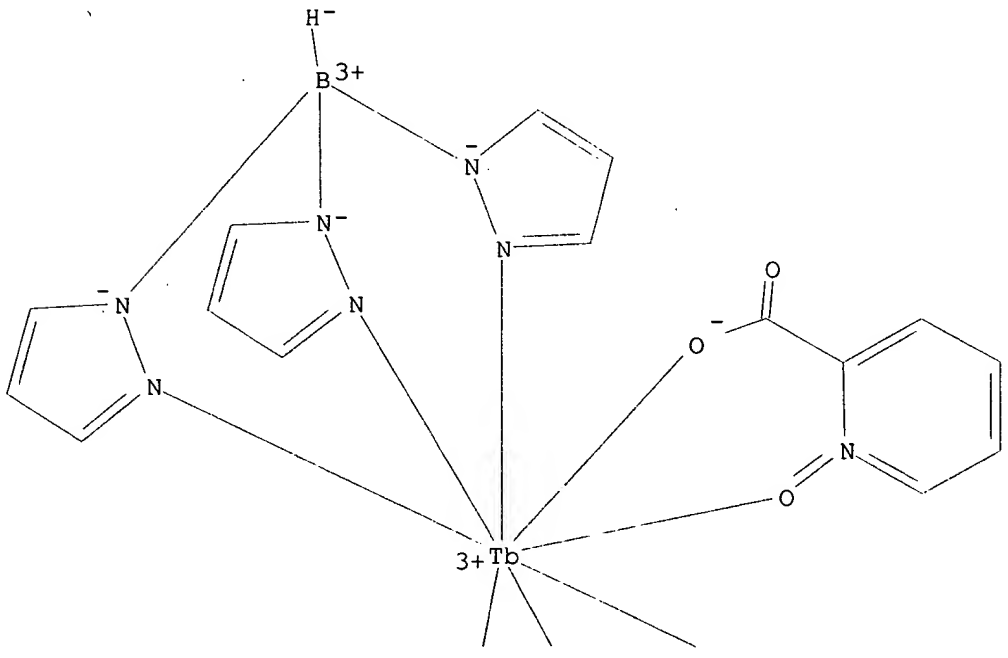


IT **221457-38-1P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure and **luminescence**)
RN 221457-38-1 HCAPLUS
CN Terbium, bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-
.kappa.N2,.kappa.N2',.kappa.N2''][(2-pyridinecarboxylic acid-.kappa.O2)
1-(oxidato-.kappa.O)]-, (SA-8-123333'3'3')- (9CI) (CA INDEX NAME)

PAGE 1-A



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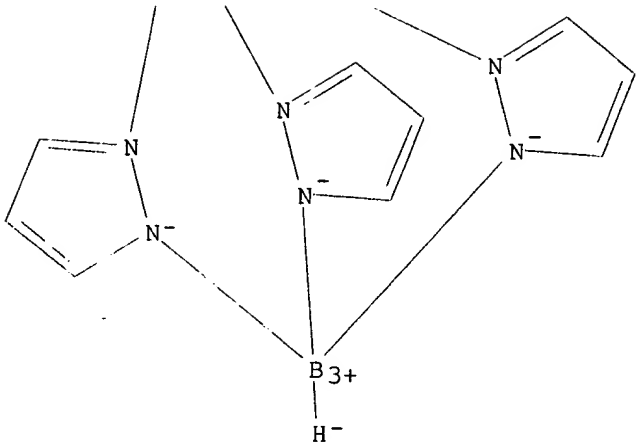

L16 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:55807 HCAPLUS
DN 130:245582
TI Lanthanide complexes of a new sterically hindered potentially hexadentate podand ligand based on a tris(pyrazolyl)borate core; crystal structures, solution structures and **luminescence** properties
AU Reeves, Zoe R.; Mann, Karen L. V.; Jeffery, John C.; McCleverty, Jon A.; Ward, Michael D.; Barigelletti, Francesco; Armaroli, Nicola
CS School of Chemistry, University of Bristol, Bristol, BS8 1TS, UK
SO J. Chem. Soc., Dalton Trans. (1999), (3), 349-356
CODEN: JCDTBI; ISSN: 0300-9246
PB Royal Society of Chemistry
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 28, 73, 75
AB The new podand ligand hydrotris[3-(6-methyl)pyridin-2-ylpyrazol-1-yl]borate [L1]- was prepd. which contains three bidentate pyrazolyl/pyridine arms attached to a {BH}- head-group. This ligand differs from an earlier ligand hydrotris[3-(2-pyridyl)pyrazol-1-yl]borate [L2]- by the presence of Me groups attached to the C6 positions of the pyridyl rings, which would interfere with each other sterically if the ligand coordinated in a fully hexadentate manner. Instead, crystallog. anal. of [M(L1)(NO3)2(H2O)] (M = Eu, Tb or Gd) showed that partial dissocn. of the podand occurs to relieve this potential steric problem: either one or two of the pyridyl groups are not coordinated, such that [L1]- is penta- or tetra-dentate, but instead are involved in intramol. N.cntdot..cntdot..cntdot.H-O hydrogen-bonding interactions with the coordinated water mol. The presence of both structural forms in single crystals of the gadolinium and europium complexes shows that interconversion between them in soln. must be facile. Variable-temp. 1H NMR spectra of the diamagnetic lanthanum(III) analog shows that, whereas all three ligand arms are equiv. on the NMR timescale at high temps., at -80.degree. there is mirror symmetry in the complex such that two arms are equiv. and the 3rd is different from the other two; this is consistent with the cryst. form in which [L1]- is tetradentate with two pendant pyridyl arms, which has pseudo-mirror symmetry. **Luminescence** studies showed that whereas the ligand-based **luminescence** is retained in the gadolinium(III) complex, in the europium(III) and

terbium(III) complexes the ligand-centered emission is quenched by ligand-to-metal energy transfer, resulting in the usual metal-centered emission spectra. The intensity of the emission from the europium(III) and terbium(III) complexes of [L1]- is substantially reduced compared to the emission from the analogous complexes [M(L2)(NO3)2] (M = Eu or Tb) which the authors ascribe to the sterically induced poorer coordination of the podand ligand, resulting in (i) less efficient ligand-to-metal energy transfer, and (ii) coordination of labile solvent mols. (H2O) to the metal centers.

ST rare earth hydrotrispyridinylpyrazolylborate complex prepn crystal structure **luminescence**; lanthanide hydrotrispyridinylpyrazolylbo rate complex prepn crystal structure **luminescence**; europium hydrotrispyridinylpyrazolylborate complex prepn crystal structure **luminescence**; terbium hydrotrispyridinylpyrazolylborate complex prepn crystal structure **luminescence**; gadolinium hydrotrispyridinylpyrazolylborate complex prepn crystal structure **luminescence**; pyridinylpyrazolylborate rare earth complex prepn crystal structure **luminescence**; pyrazolylborate rare earth complex prepn crystal structure **luminescence**

IT Intramolecular energy transfer
Luminescence quenching
Photoinduced energy transfer
(**luminescence** quenching in europium and terbium hydrotris(methylpyridinylpyrazolyl)borate complexes due to ligand-to-metal energy transfer)

IT Crystal structure
Luminescence
Molecular structure
(of rare earth hydrotris(methylpyridinylpyrazolyl)borate complexes)

IT Rare earth complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure and **luminescence** of lanthanide hydrotris(methylpyridinylpyrazolyl)borate complexes)

IT 6940-57-4P, 2-Acetyl-6-methylpyridine 79571-43-0P 203569-23-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(intermediate in prepn. of hydrotris(methylpyridinylpyrazolyl)borate and its rare earth complexes)

IT 221367-97-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and complexation with rare earths)

IT **221367-80-2P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure and **luminescence**)

IT 221367-73-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT **221367-50-6P 221367-60-8P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure and **luminescence**)

IT **221367-65-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. structure and **luminescence**)

IT 4637-24-5, Dimethylformamide dimethyl acetal 5315-25-3, 2-Bromo-6-methylpyridine 13762-51-1, Potassium tetrahydroborate
RL: RCT (Reactant)
(reactant for prepn. of hydrotris(methylpyridinylpyrazolyl)borate and its rare earth complexes)

RE.CNT 28
RE
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IT **221367-80-2P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure and **luminescence**)

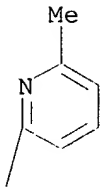
RN 221367-80-2 HCAPLUS

CN Terbium, aqua[hydrotris[2-methyl-6-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')-, compd. with dichloromethane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 221367-65-3
CMF C27 H27 B N11 O7 Tb
CCI CCS

PAGE 1-A



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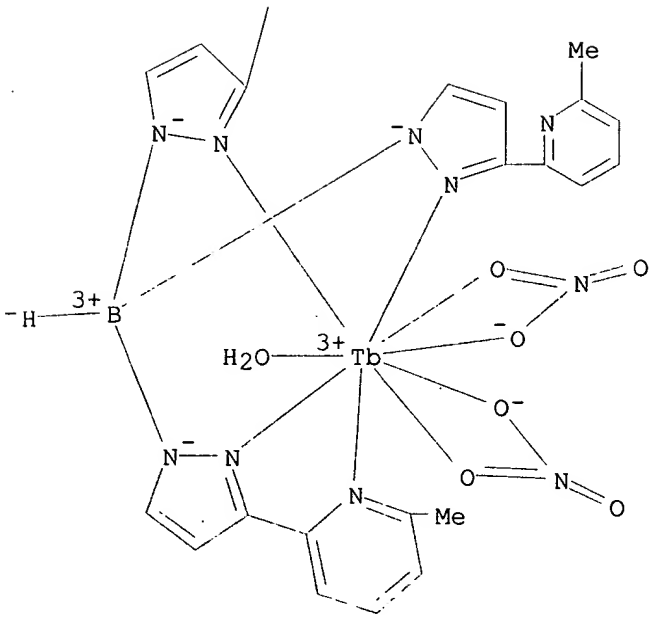
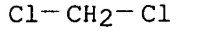


CM 2

CRN 75-09-2

CMF C H2 Cl2

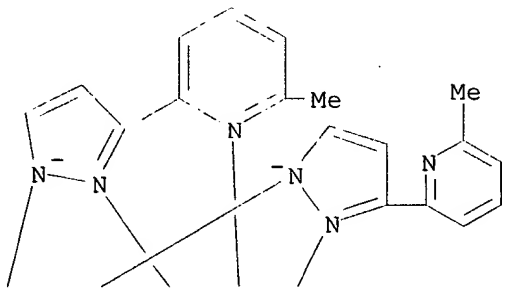


IT **221367-50-6P 221367-60-8P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure and **luminescence**)
RN 221367-50-6 HCAPLUS
CN Europium, aqua[hydrotris[2-methyl-6-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')-, compd. with aqua[hydrotris[2-methyl-6-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')europium (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 221367-49-3
CMF C27 H27 B Eu N11 O7
CCI CCS

PAGE 1-A



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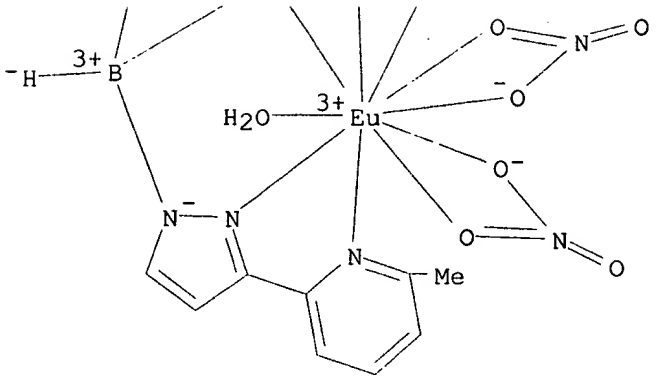

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CCI CCS

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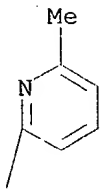

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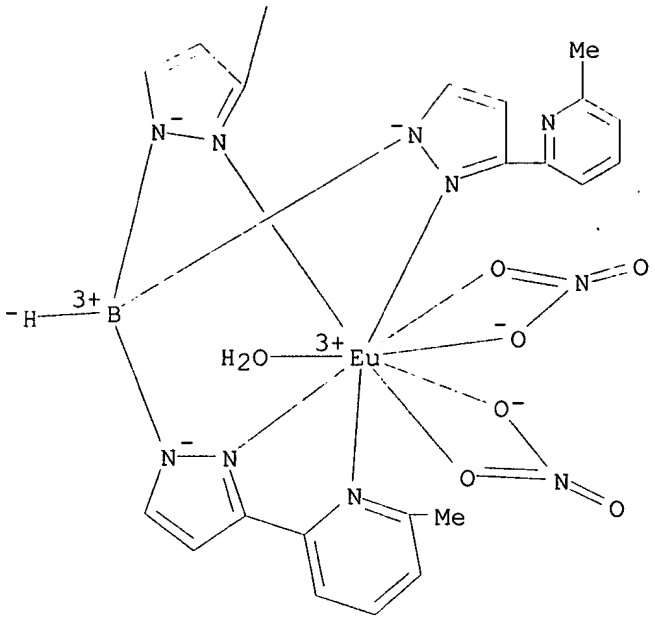

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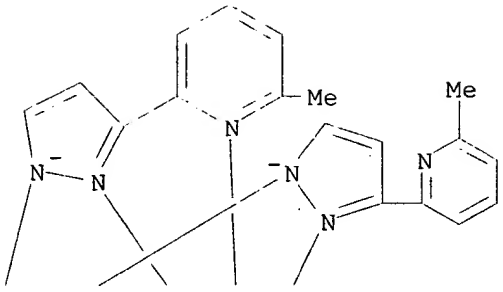
CN Gadolinium, aqua[hydrotris[2-methyl-6-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')-, compd. with aqua[hydrotris[2-methyl-6-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')gadolinium (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 221367-59-5
CMF C27 H27 B Gd N11 O7
CCI CCS

PAGE 1-A



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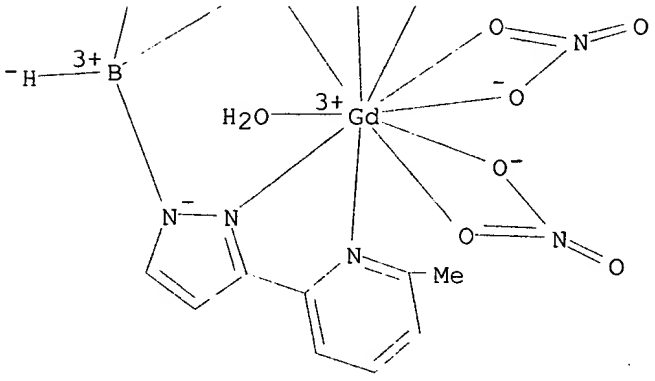

CM 2

CRN 221367-58-4
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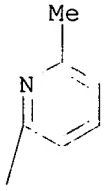
CCI CCS

PAGE 1-A



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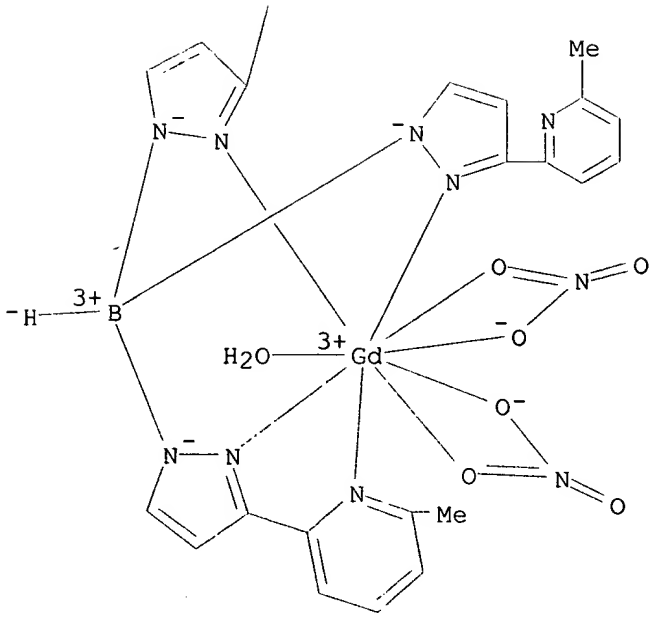
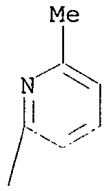


IT **221367-65-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. structure and **luminescence**)
RN 221367-65-3 HCAPLUS

CN Terbium, aqua[hydrotris[2-methyl-6-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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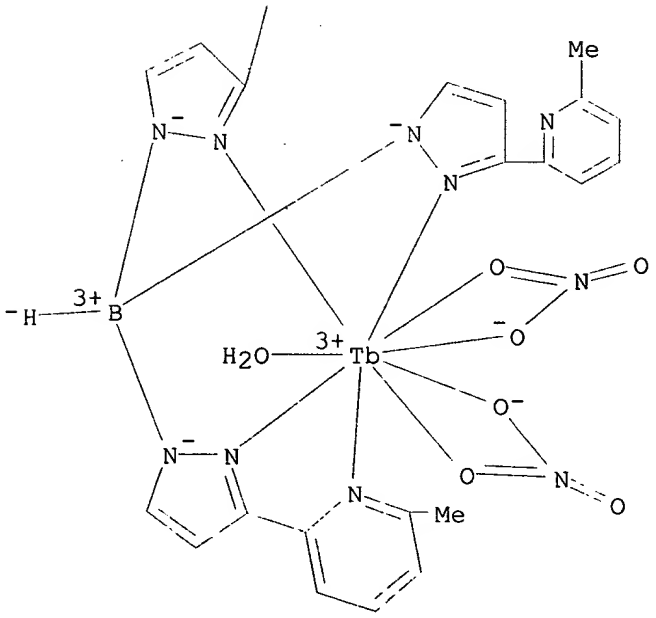

L16 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:9912 HCAPLUS
DN 130:102684
TI **Electroluminescent** material
IN Kathirgamanathan, Poopathy
PA South Bank University Enterprises Ltd., UK
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76, 78
FAN.CNT 1

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PRAI GB 1997-12483 19970617
WO 1998-GB1773 19980617
OS MARPAT 130:102684
AB **Electroluminescent** devices comprising a transparent substrate on which is formed a layer of an **electroluminescent** material are described in which the **electroluminescent** material is a rare earth metal, actinide or transition metal org. complex which has a **photoluminescent** efficiency (PL) >25%, preferably >40%. **Electroluminescent** complexes are also described. in which the metal is a rare earth, transition metal, lanthanide, or an actinide and .gtoreq.1 of the ligands is either O-C(R')-C(R")-C(R')-O or a 2,2'-Bis(pyridyl)ketone deriv. (R'= (un)substituted arom. or heterocylic ring structures, a hydrocarbyl of a fluorocarbon, or tert-butyl; and R" = (un)substituted arom. or heterocylic ring structures, a hydrocarbyl of a fluorocarbon, F, or H, or can be part of a copolymer). Preferably, the metals are selected from Sm(III), Eu(III), Tb(III), Dy(III), Yb(III), Lu(III), Gd (III), Eu(II), U(III), UO2(VI), and Th(III).
ST **electroluminescent** device metal complex; material **electroluminescent** metal complex
IT Actinide compounds
RL: DEV (Device component use); USES (Uses)
(complexes; **electroluminescent** materials based on metal complexes and devices using them)
IT **Electroluminescent** devices
Electroluminescent phosphors
(**electroluminescent** materials based on metal complexes and devices using them)
IT Rare earth complexes

Transition metal complexes
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** materials based on metal complexes and devices using them)

IT Polyanilines
RL: DEV (Device component use); USES (Uses)
(hole transport material; **electroluminescent** materials based on metal complexes and devices using them)

IT 7429-90-5, Aluminium, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-70-2, Calcium, uses 37271-44-6
RL: DEV (Device component use); USES (Uses)
(anode; **electroluminescent** materials based on metal complexes and devices using them)

IT 50926-11-9, Indium tin oxide
RL: DEV (Device component use); USES (Uses)
(cathode; **electroluminescent** materials based on metal complexes and devices using them)

IT 1118-71-4D, terbium-dipyrazolyl oxide borate and terbium-tripyrazolyl oxide borate complexes 7439-94-3D, Lutetium, complexes 7440-19-9D, Samarium, complexes 7440-27-9D, Terbium, dipivaloylmethane-dipyrazolyl oxide borate and dipivaloylmethane-tripyrazolyl oxide borate complexes 7440-29-1D, Thorium, complexes 7440-54-2D, Gadolinium, complexes 7440-61-1D, Uranium, complexes 7440-64-4D, Ytterbium, complexes **20219-51-6** 219121-79-6D, terbium dipivaloylmethane complexes 219121-80-9D, terbium dipivaloylmethane complexes **219136-83-1** 219136-85-3 219136-89-7 219136-94-4 219136-98-8 219137-01-6 219137-06-1
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** materials based on metal complexes and devices using them)

IT 156915-57-0P 156952-11-3P 156952-13-5P 203806-96-6P 219121-71-8P 219121-72-9P 219121-73-0P 219121-74-1P 219121-75-2P 219121-76-3P 219121-78-5P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**electroluminescent** materials based on metal complexes and devices using them)

IT 541-09-3, Uranyl acetate 1662-01-7, 4,7-Diphenyl-1,10-phenanthroline 2156-69-6 14552-07-9 15522-69-7 19437-26-4, Di-(2-pyridyl) ketone 31239-06-2, Imidotetraphenyldiphosphinic acid 218917-64-7 218917-67-0 218917-70-5 219144-50-0
RL: RCT (Reactant)
(**electroluminescent** materials based on metal complexes and devices using them)

IT 15492-51-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(**electroluminescent** materials based on metal complexes and devices using them)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 15082-28-7
RL: DEV (Device component use); USES (Uses)
(electron-injecting material; **electroluminescent** materials based on metal complexes and devices using them)

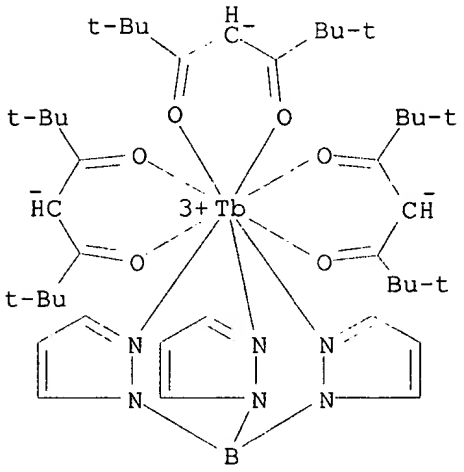
IT 25067-59-8, Poly(vinylcarbazole) 25233-30-1, Polyaniline 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine
RL: DEV (Device component use); USES (Uses)
(hole transport material; **electroluminescent** materials based on metal complexes and devices using them)

RE.CNT 8
RE
(1) Amersham Int Plc; EP 0556005 A 1993 HCAPLUS

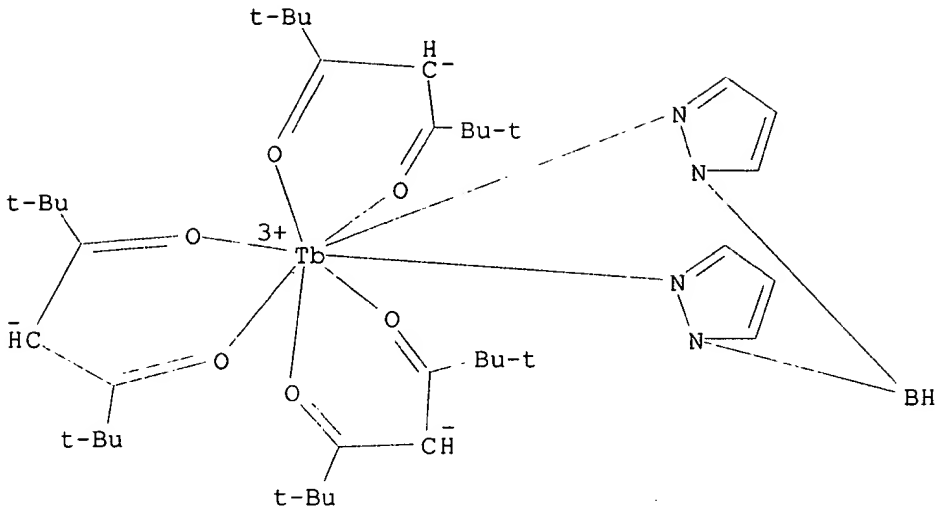
(2) Amersham Int Plc; EP 0744451 A 1996 HCAPLUS
(3) Dirr, S; International Conference on Electroluminescence of Molecular Materials and Related Phenomena 1997, V91(1-3), P53 HCAPLUS
(4) Greenham, N; Chemical Physics Letters 1995, V241(1-2), P89
(5) Junji, K; US 5128587 A 1992 HCAPLUS
(6) Kido, J; Japanese Journal Appl Phys V35(3B), PL394 HCAPLUS
(7) Kido, J; Japanese Journal of Applied Physics, Part 2 (Letters) 1996
(8) Lin, L; International Conference on Electroluminescence of Molecular Materials and Related Phenomena 1997, V91(1-3), P267

IT **20219-51-6 219136-83-1**
RL: DEV (Device component use); USES (Uses)
(**electroluminescent** materials based on metal complexes and devices using them)

RN 20219-51-6 HCAPLUS
CN Terbium, tris(2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')[1,1',1''-borylidynetris[1H-pyrazole-.kappa.N2]]- (9CI) (CA INDEX NAME)



RN 219136-83-1 HCAPLUS
CN Terbium, [1,1'-borylenebis[1H-pyrazole-.kappa.N2]]tris(2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)



L16 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:806731 HCAPLUS
DN 130:73617
TI Organometallic complexes
IN Christou, Victor
PA Isis Innovation Ltd., UK
SO PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14; C07D401-00
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76, 78

applicant

only reference to elected species

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9855561	A1	19981210	WO 1998-GB1587	19980601
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9876681	A1	19981221	AU 1998-76681	19980601
	EP 988353	A1	20000329	EP 1998-924488	19980601
	R: BE, DE, ES, FR, GB, IT, NL				

PRAI GB 1997-11237 19970602
WO 1998-GB1587 19980601
OS MARPAT 130:73617
AB **Light-emitting** devices are described which employ organometallic complexes comprising a lanthanide metal cation complexed with 1-3 polydentate ligands contg. .gtoreq.1 (un)substituted pyrazolyl groups optionally fused with (un)substituted heterocyclic or carbocyclic

(non)arom. ring systems, with a coordinate bond formed between the metal and one of the nitrogen atoms of the pyrazolyl rings. Preferably, the ligands comprise trispyrazolyl borate derivs. Organometallic compds. suitable for the devices are also claimed, as are methods of producing them entailing the reaction of the ligands with a cation followed by sepn. of the products. Compns. combining the compds. with a matrix material are also described. Use in **electroluminescent** flat panel displays is also described.

ST lanthanide pyrazolyl deriv complex **electroluminescent** material

IT **Electroluminescent** devices
Electroluminescent phosphors
(lanthanide-pyrazolyl deriv. complexes and **electroluminescent** devices and displays using them)

IT Rare earth complexes
RL: DEV (Device component use); USES (Uses)
(lanthanide-pyrazolyl deriv. complexes and **electroluminescent** devices and displays using them)

IT 15082-28-7 25067-59-8, Polyvinylcarbazole
RL: DEV (Device component use); USES (Uses)
(lanthanide-pyrazolyl deriv. complexes and **electroluminescent** devices and displays using them)

IT **171672-48-3P 171672-50-7P 171672-51-8P**
217956-36-0P 217956-37-1P 217956-38-2P
217956-39-3P 217956-40-6P 217956-41-7P
217956-42-8P 217956-43-9P 217956-44-0P
217956-45-1P 217956-46-2P 217956-47-3P
217956-48-4P 217956-49-5P 217956-50-8P
217956-51-9P 217956-52-0P 217956-53-1P
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)
(lanthanide-pyrazolyl deriv. complexes and **electroluminescent** devices and displays using them)

IT 10025-76-0, Europium trichloride 13762-51-1, Potassium borohydride 14704-41-7 17567-17-8 34622-08-7, Neodymium triflate 52093-25-1, Europium triflate 52093-28-4, Samarium triflate 52093-29-5, Gadolinium triflate 76089-77-5, Cerium(III) trifluoromethylsulfonate 84768-84-3 139177-64-3, Erbium triflate 141478-68-4, Thulium triflate 148980-31-8, Terbium(III) trifluoromethylsulfonate 157409-94-4 217956-54-2
RL: RCT (Reactant)
(lanthanide-pyrazolyl deriv. complexes and **electroluminescent** devices and displays using them)

IT 167898-36-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(lanthanide-pyrazolyl deriv. complexes and **electroluminescent** devices and displays using them)

RE.CNT 3
RE
(1) Armaroli, N; Chemical Physics Letters 1997, V276(5-6), P435
(2) Univ Princeton; WO 9806242 A 1998 HCAPLUS
(3) Wallac OY; WO 9311433 A 1993 HCAPLUS

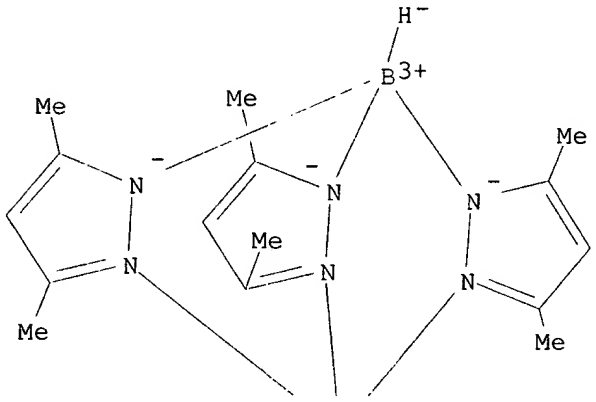
IT **171672-48-3P 171672-50-7P 171672-51-8P**
217956-36-0P 217956-37-1P 217956-38-2P
217956-39-3P 217956-40-6P 217956-41-7P
217956-42-8P 217956-43-9P 217956-44-0P
217956-45-1P 217956-46-2P 217956-47-3P
217956-48-4P 217956-49-5P 217956-50-8P
217956-51-9P 217956-52-0P 217956-53-1P
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); PREP (Preparation); USES (Uses)

(lanthanide-pyrazolyl deriv. complexes and **electroluminescent** devices and displays using them)

RN 171672-48-3 HCAPLUS

CN Cerium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (OCF-7-1-2222'2'2')- (9CI) (CA INDEX NAME)

PAGE 1-A



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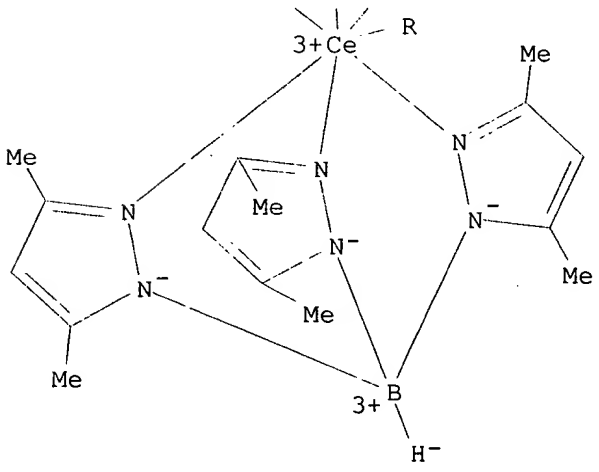

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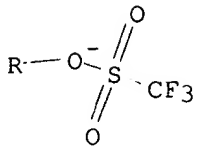

RN 171672-50-7 HCAPLUS
CN Neodymium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (OCF-7-1-2222'2'2')- (9CI) (CA INDEX NAME)

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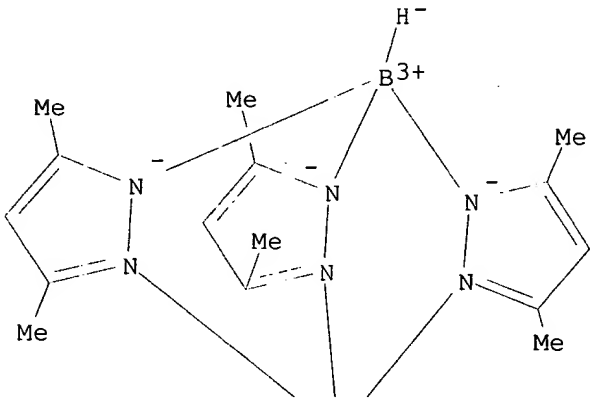

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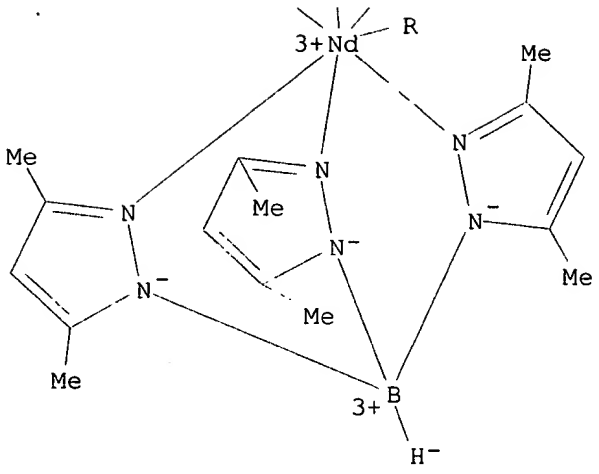

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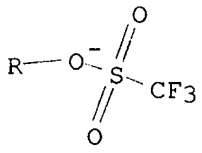

RN 171672-51-8 HCAPLUS
CN Samarium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (OCF-7-1-2222'2'2')- (9CI) (CA INDEX NAME)

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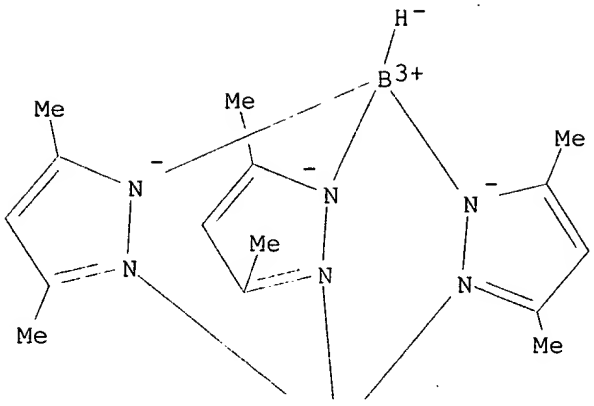

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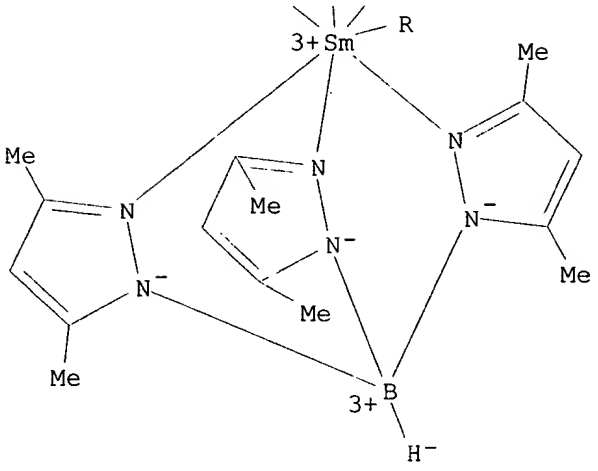

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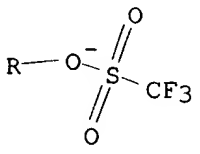

RN 217956-36-0 HCAPLUS
CN Terbium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)

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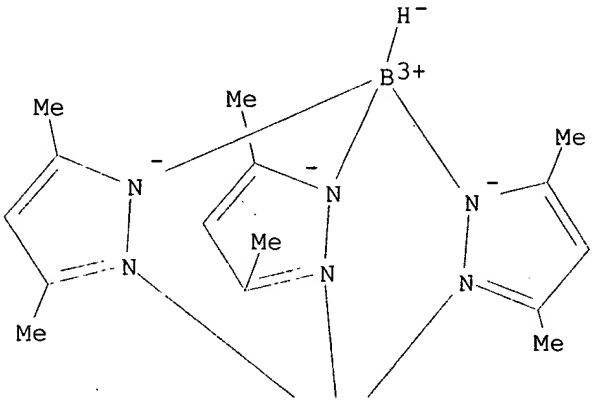

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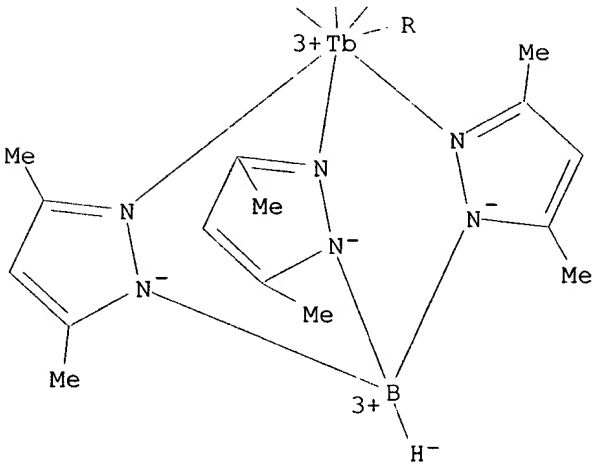

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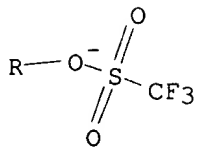

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CN Europium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)

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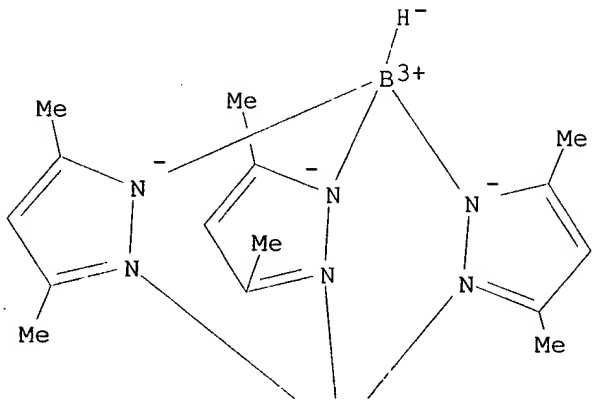

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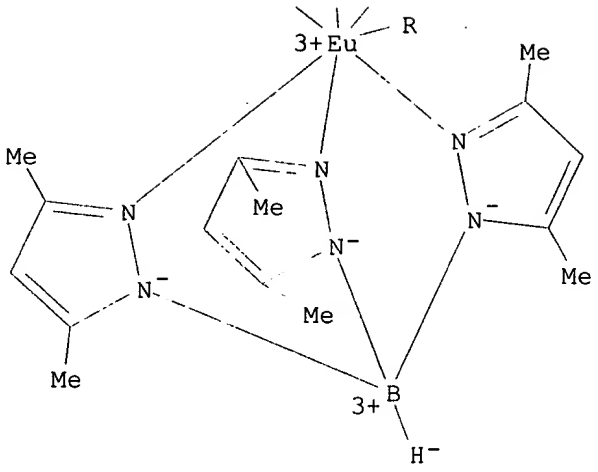

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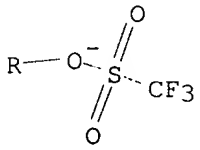

RN 217956-38-2 HCAPLUS
CN Erbium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)

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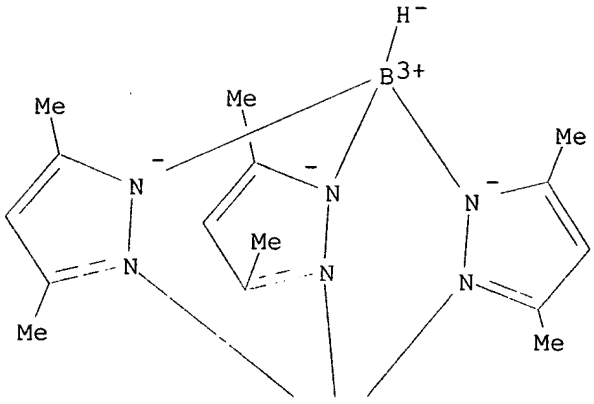

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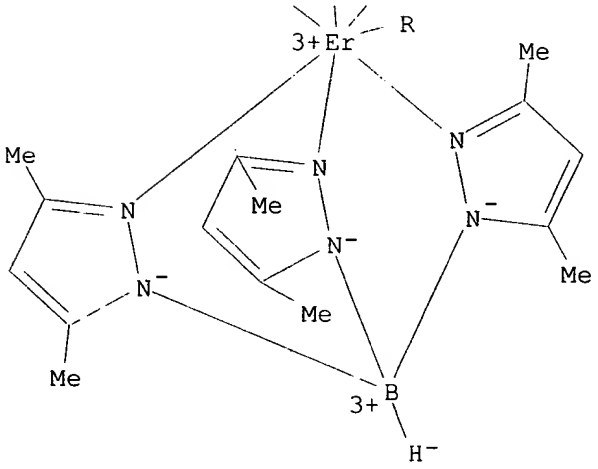

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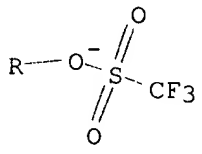

RN 217956-39-3 HCAPLUS
CN Europium, chlorobis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']- (9CI) (CA INDEX NAME)

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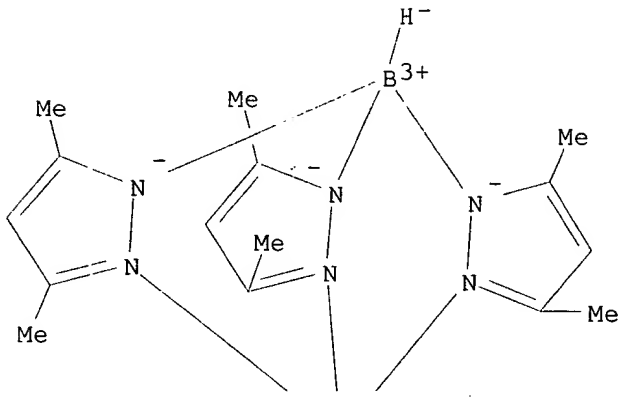

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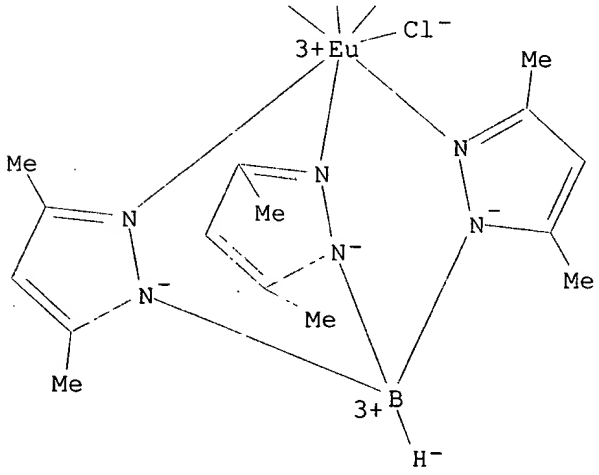

RN 217956-40-6 HCAPLUS
CN Europium, chlorobis[tris[3,5-bis(trifluoromethyl)-1H-pyrazolato-.kappa.N1]hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']- (9CI) (CA

INDEX NAME)

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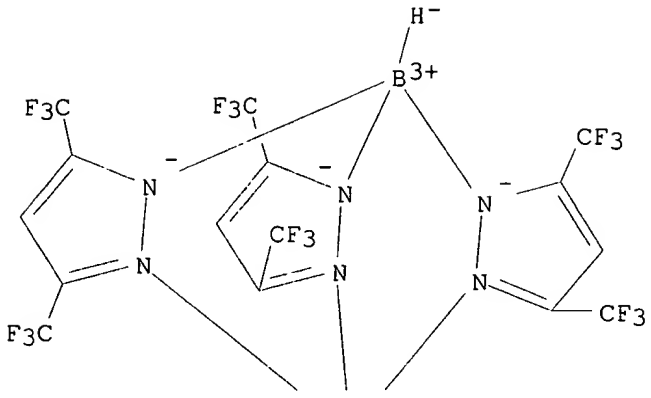

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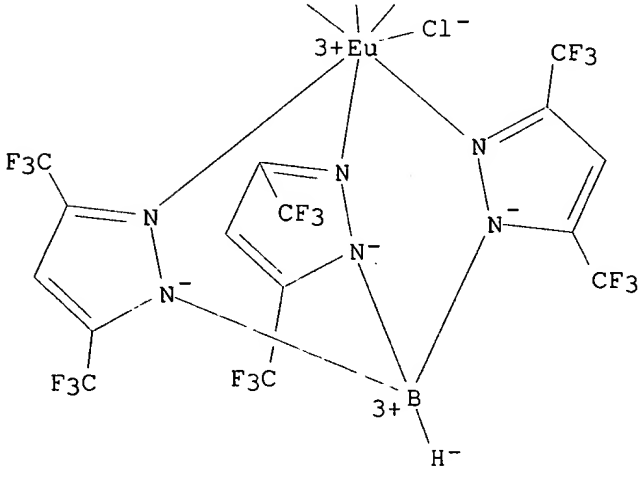

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CN Thulium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)

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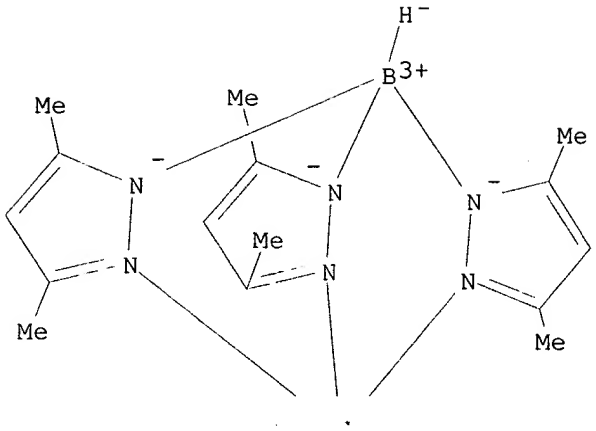

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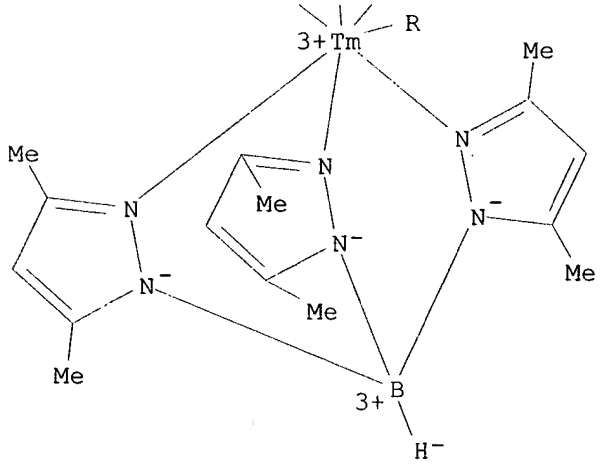

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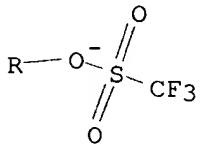
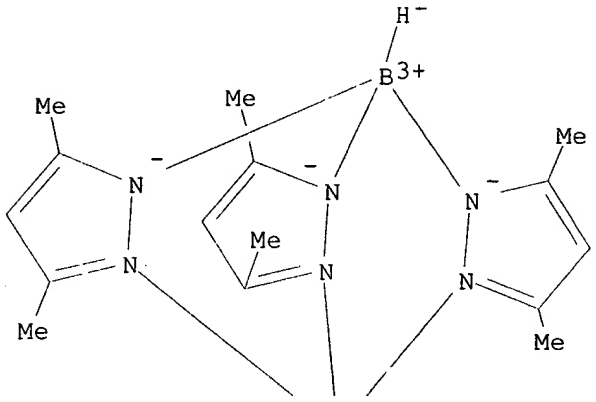


RN 217956-42-8 HCAPLUS
CN Gadolinium, (trifluoromethanesulfonato-.kappa.O)bis[tris(3,5-dimethyl-1H-pyrazolato-.kappa.N1)hydroborato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)

PAGE 1-A



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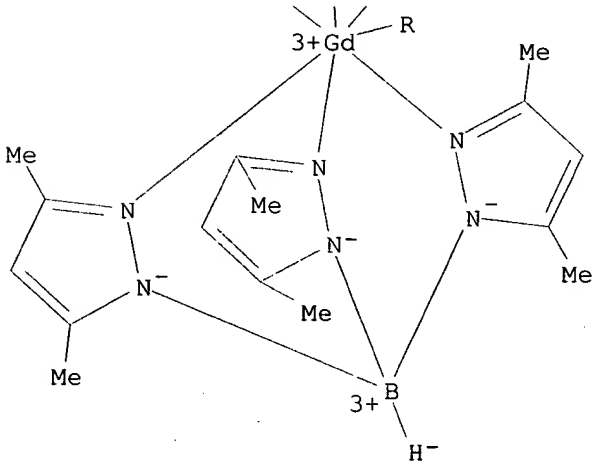

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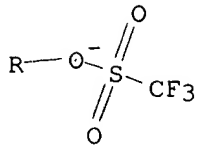
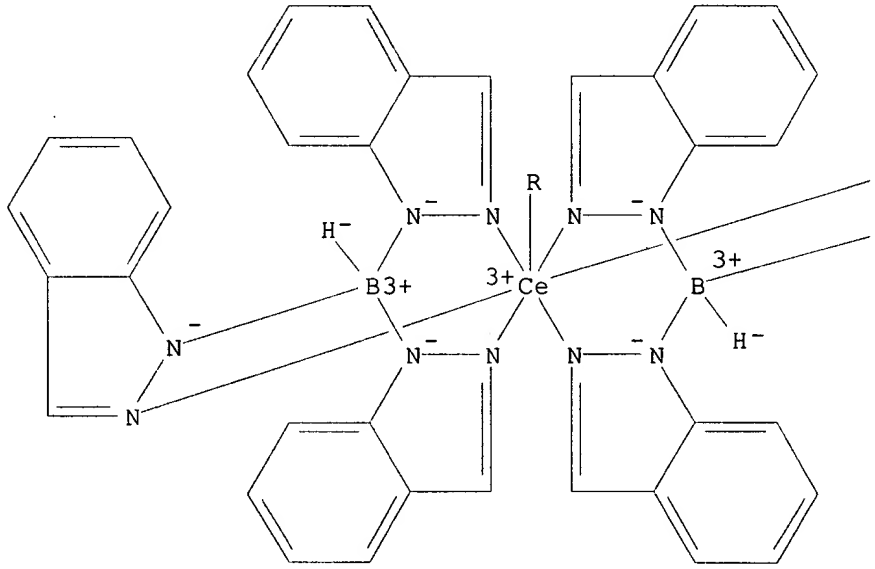
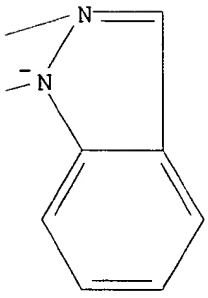


RN 217956-43-9 HCAPLUS
CN Cerium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']trifluoromethanesulfonato-.kappa.O)-(9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



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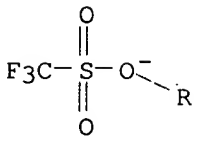
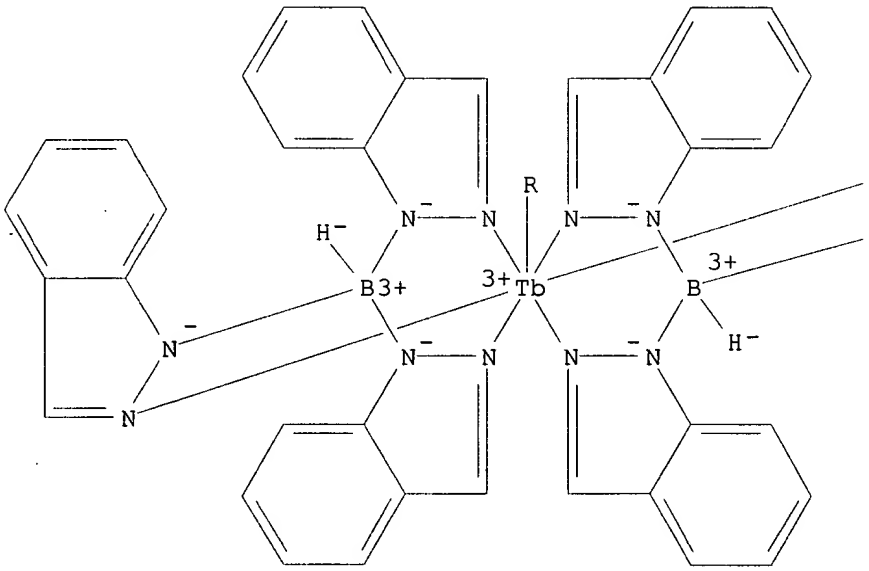


RN 217956-44-0 HCAPLUS
CN Terbium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']{trifluoromethanesulfonato-.kappa.O)-(9CI) (CA INDEX NAME)

PAGE 1-A



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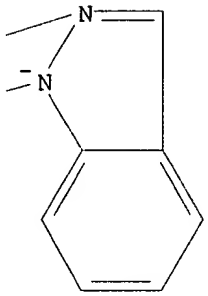

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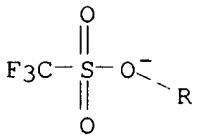

RN 217956-45-1 HCAPLUS
CN Europium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2''](trifluoromethanesulfonato-.kappa.O)-(9CI) (CA INDEX NAME)

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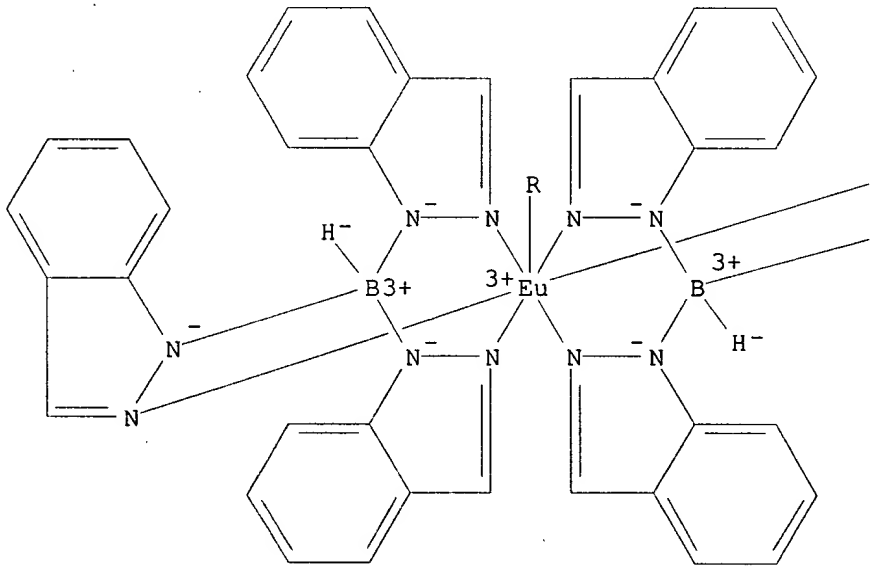

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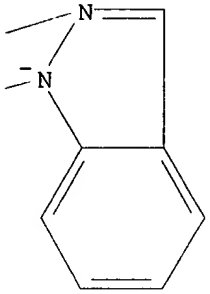

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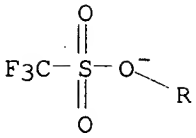

RN 217956-46-2 HCAPLUS
CN Thulium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2''](trifluoromethanesulfonato-.kappa.O)-(9CI) (CA INDEX NAME)

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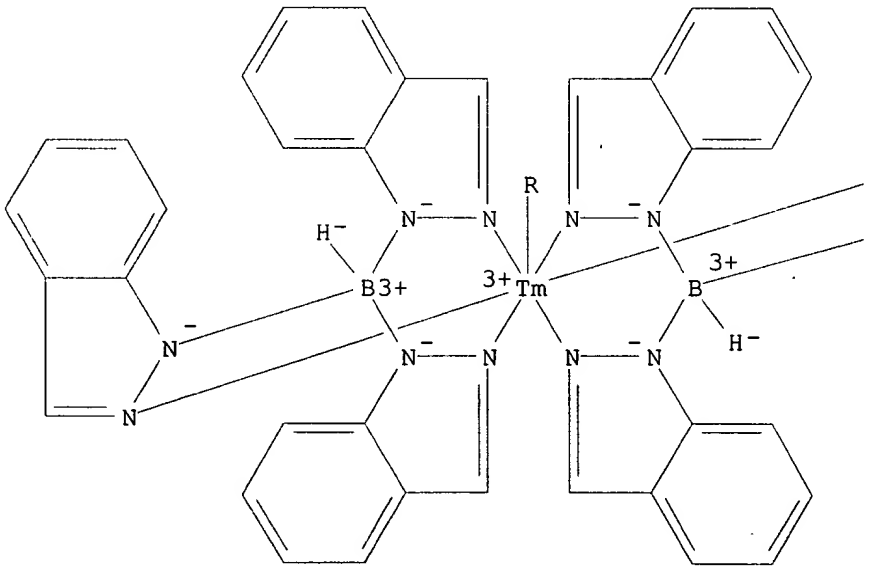

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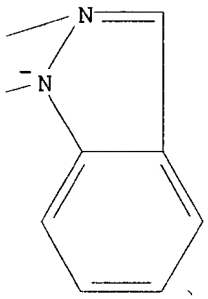

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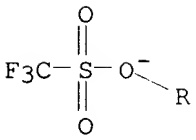

RN 217956-47-3 HCAPLUS
CN Samarium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']{trifluoromethanesulfonato-.kappa.O)-(9CI) (CA INDEX NAME)

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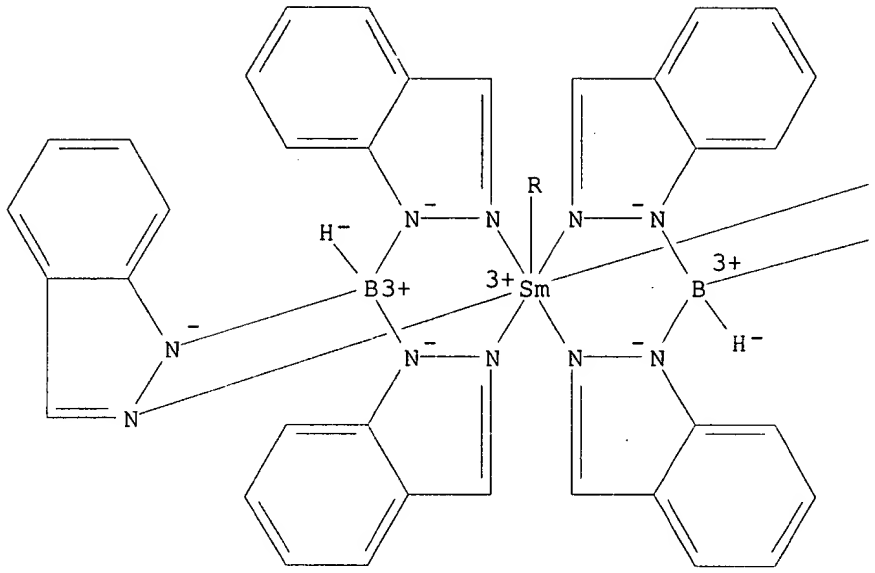

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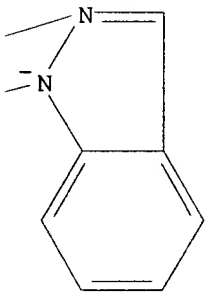

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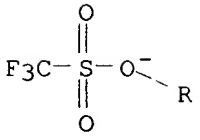

RN 217956-48-4 HCAPLUS
CN Gadolinium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2''](trifluoromethanesulfonato-.kappa.O)-(9CI) (CA INDEX NAME)

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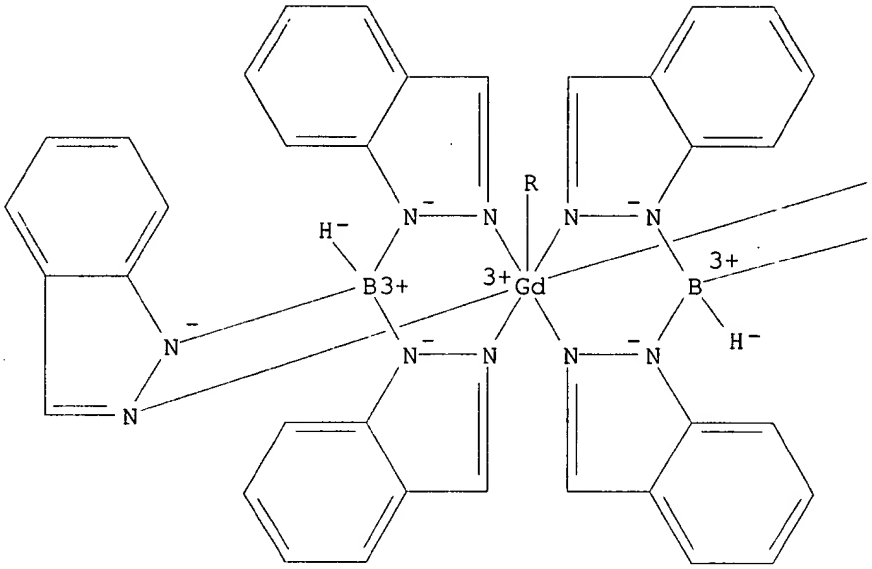

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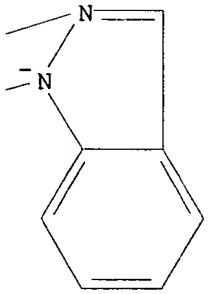

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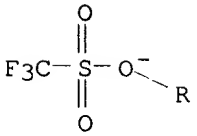

RN 217956-49-5 HCAPLUS
CN Neodymium, bis[hydrotris(1H-indazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2''](trifluoromethanesulfonato-.kappa.O)-

(9CI) (CA INDEX NAME)

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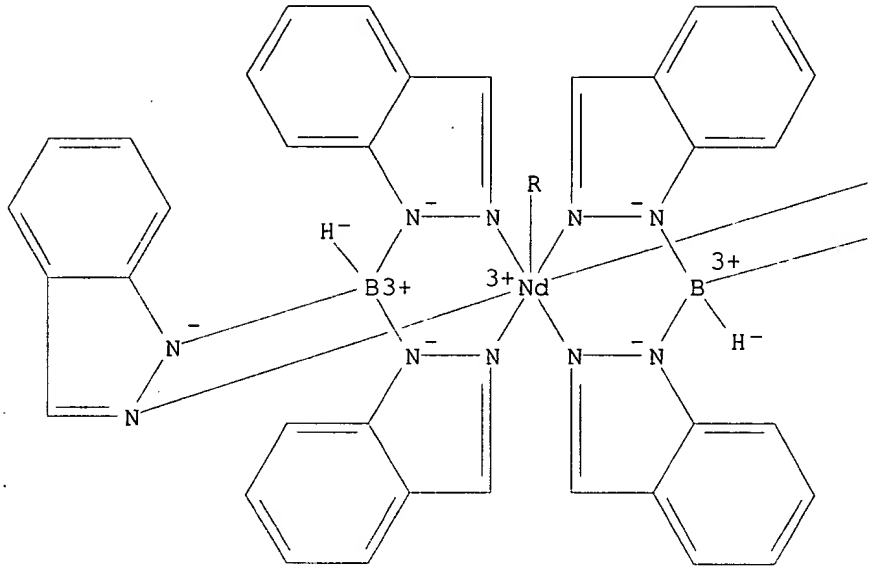

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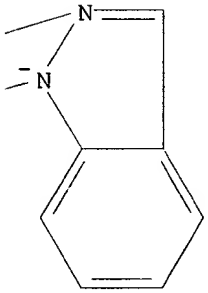

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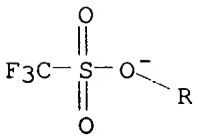

RN 217956-50-8 HCAPLUS
CN Terbium, (trifluoromethanesulfonato-.kappa.O)bis[tris(4,5-dihydro-2H-

benz[g]indazolato-.kappa.N2)hydroborato(1-)-.kappa.N1,.kappa.N1',.kappa.N1''']- (9CI) (CA INDEX NAME)

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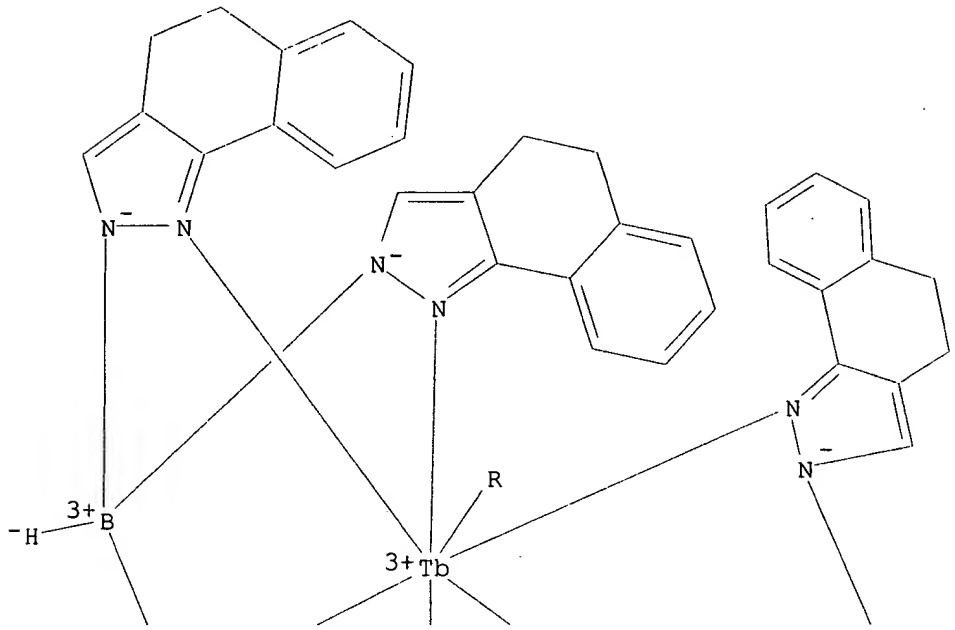

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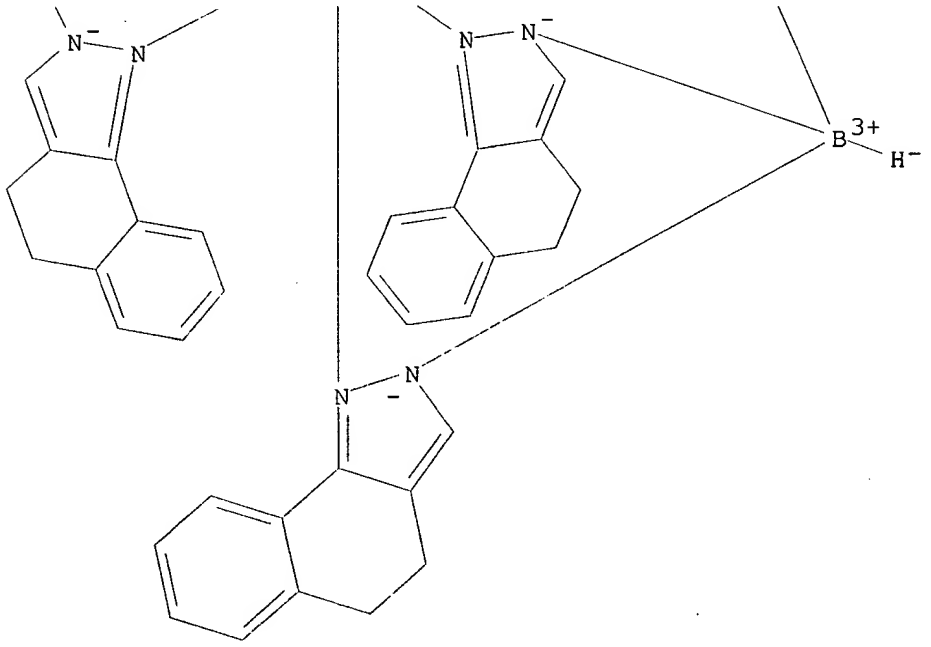

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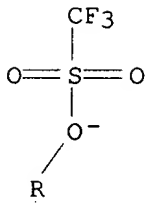

RN 217956-51-9 HCAPLUS
CN Cerium, (trifluoromethanesulfonato-.kappa.O)bis[tris(4,5-dihydro-2H-benz[g]indazolato-.kappa.N2)hydroborato(1-)-.kappa.N1,.kappa.N1',.kappa.N1'']- (9CI) (CA INDEX NAME)

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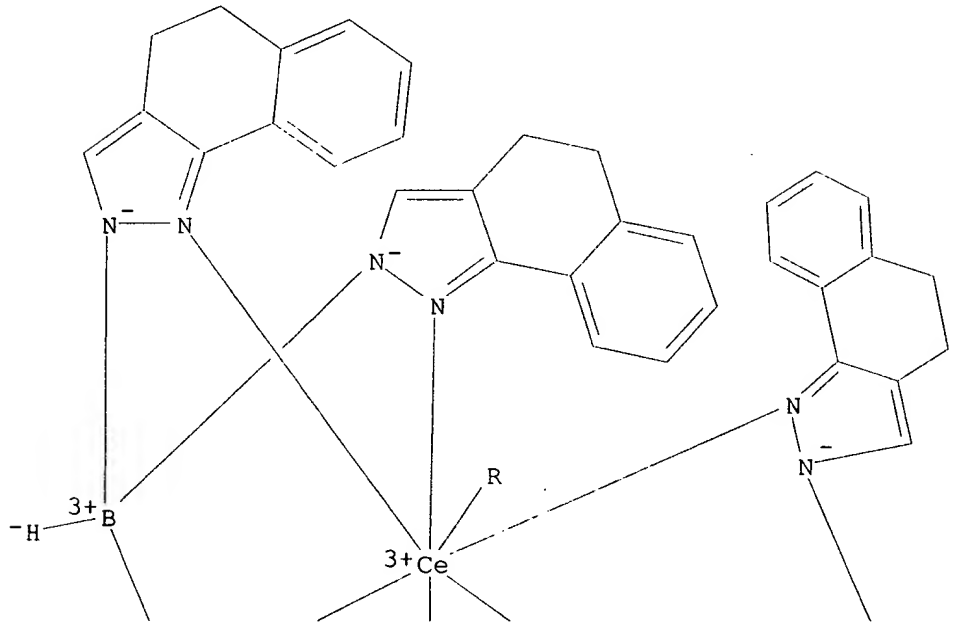

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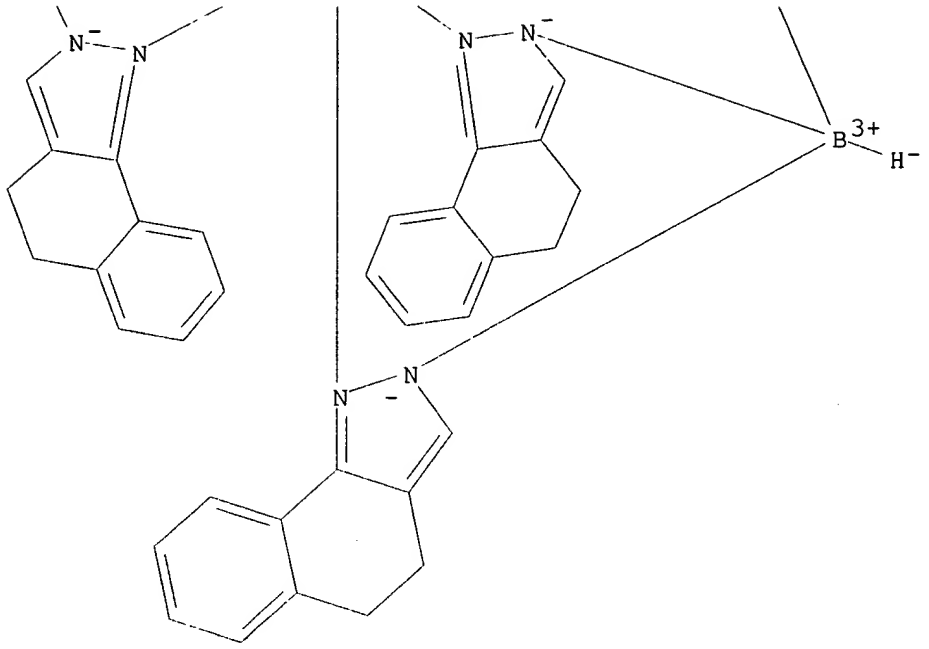

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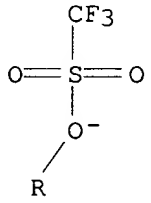

RN 217956-52-0 HCAPLUS
CN Europium, (trifluoromethanesulfonato-.kappa.O)bis[tris(4,5-dihydro-2H-benz[g]indazolato-.kappa.N2)hydroborato(1-)-.kappa.N1,.kappa.N1',.kappa.N1'']- (9CI) (CA INDEX NAME)

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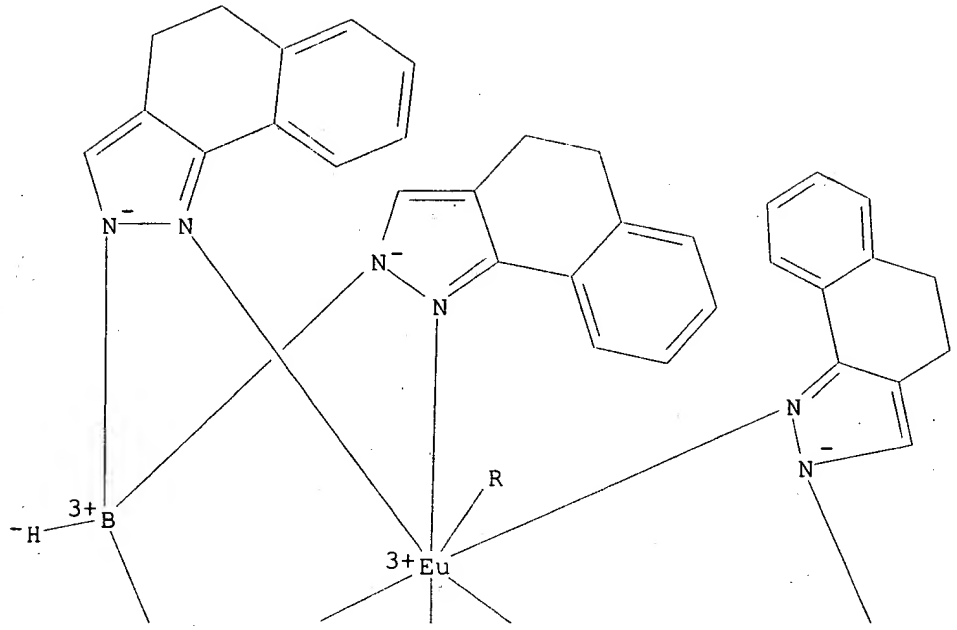

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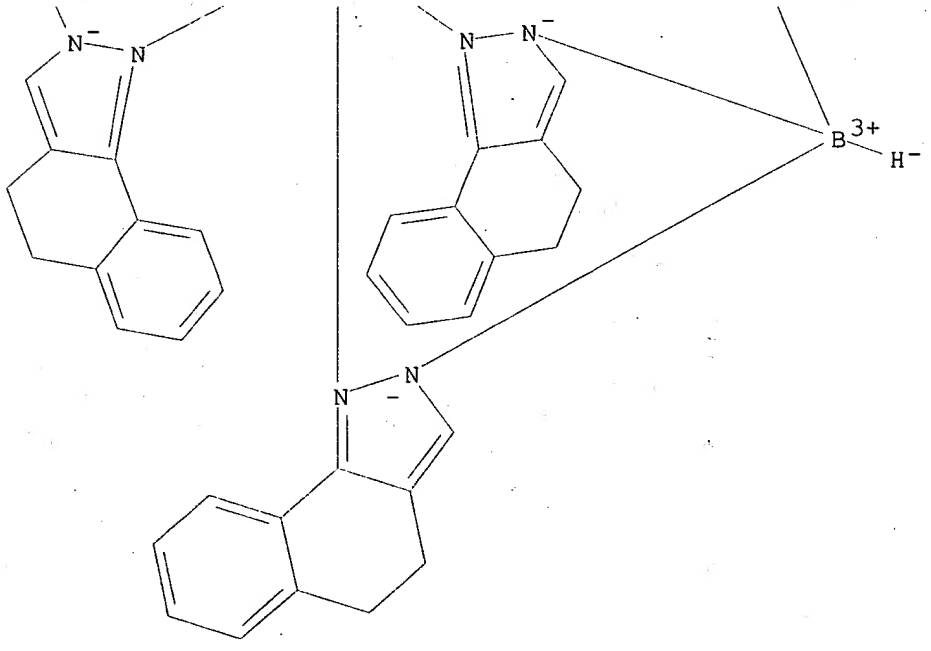

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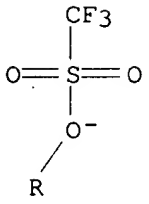

RN 217956-53-1 HCAPLUS
CN Terbium, (trifluoromethanesulfonato-.kappa.O)bis[tris(2H-benz[g]indazolato-.kappa.N2)hydroborato(1-)-.kappa.N1,.kappa.N1',.kappa.N1'']- (9CI) (CA INDEX NAME)

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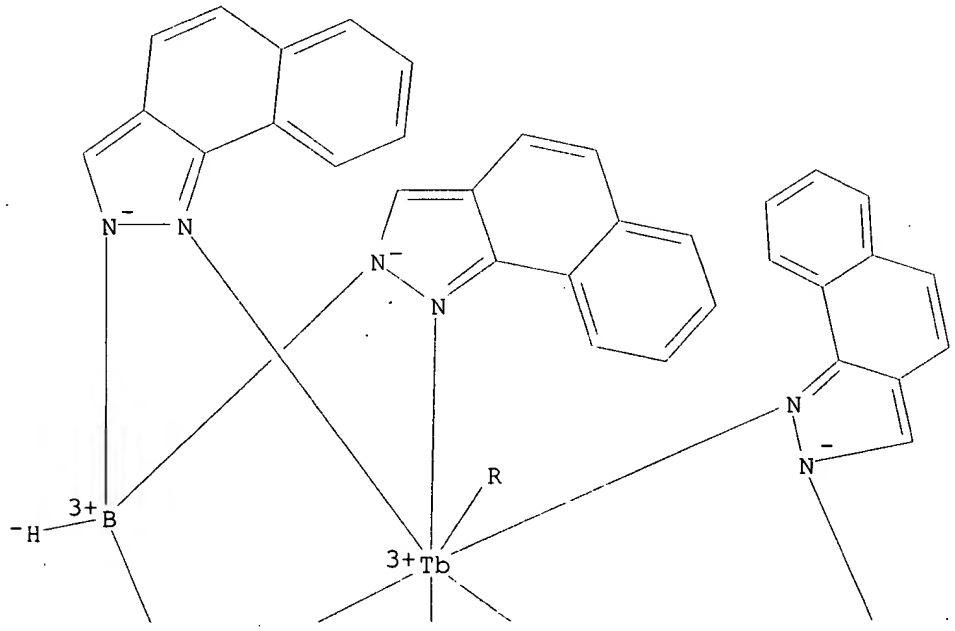

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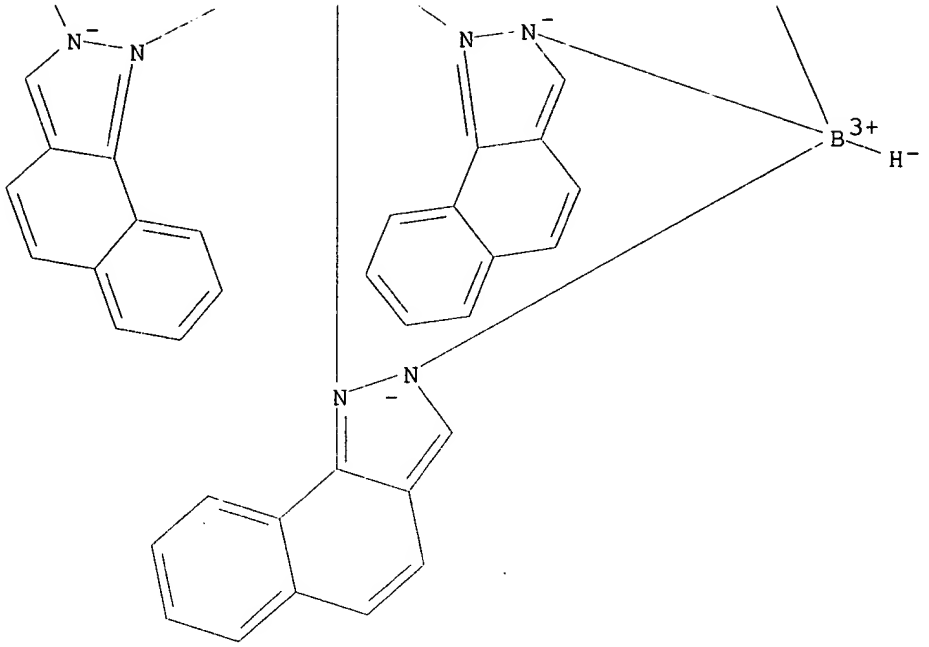

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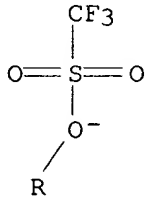


L16 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:577455 HCAPLUS
DN 129:239129
TI Heterodinuclear Complexes Containing d- and f-block Elements: Synthesis, Structural Characterization, and Metal-Metal Interactions of Novel Chromium(III)-Lanthanide(III) Compounds Bridged by Oxalate
AU Sanada, Takayuki; Suzuki, Takayoshi; Yoshida, Takafumi; Kaizaki, Sumio
CS Department of Chemistry Graduate School of Science, Osaka University, Toyonaka, 560, Japan
SO Inorg. Chem. (1998), 37(18), 4712-4717
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 73, 75, 77
AB The reaction of Ln(III) ions with a tripodal ligand HBpz3-(hydrotris(pyrazol-1-yl)borate) and a complex ligand [Cr(acac)2(ox)]-

(acac- = acetylacetonate, ox2- = oxalate) in aq. soln. afforded the novel 3d-4f heterodinuclear complexes [(acac)2Cr(ox)Ln(HBpz3)2] (Ln = Eu (1), Gd (2), Tb (3), Yb (4), Lu (5)). 4 Crystallizes in monoclinic space group P2/n, with a 8.594(3), b 18.538(4), c 12.093(2) .ANG., .beta. 93.71(2).degree., and Z = 2. Yb coordinates in an eight-coordinate distorted square antiprismatic geometry. The intramol. Cr.cntdot..cntdot..cntdot.Yb distance is 5.631(1) .ANG.. The magnetic susceptibility data for 2 showed that the CrIII-GdIII interaction is weakly antiferromagnetic with an exchange coupling const. JCrGd = -0.09 cm-1. The **luminescence** measurements demonstrated the energy transfers for both Ln(III) .fwdarw. Cr(III) and Cr(III) .fwdarw. Ln(III), of which the degree of emission quenching depends on the energy gap of the excited levels in two metal centers. These results reveal that the metal-metal interactions between Cr(III) and Ln(III) are very weak in magnetic interaction but are strong from the viewpoint of energy transfer.

ST crystal structure lanthanide chromium oxalato pyrazolylborate; rare earth pyrazolylborate chromium oxalato prepn; pyrazolylborate lanthanide oxalato bridged chromium prepn; antiferromagnetic exchange gadolinium pyrazolylborate chromium oxalato; magnetic susceptibility lanthanide pyrazolylborate chromium oxalato; phosphorescence lanthanide pyrazolylborate chromium acac oxalato; quenching phosphorescence europium terbium chromium oxalato

IT Phosphorescence quenching
(in europium and terbium hydrotris(pyrazol-1-yl)borate chromium acac oxalato bridged heterodinuclear complex)

IT Antiferromagnetic exchange
(of gadolinium hydrotris(pyrazol-1-yl)borate chromium acac oxalato bridged heterodinuclear complex)

IT Magnetic susceptibility
Phosphorescence
(of rare earth hydrotris(pyrazol-1-yl)borate chromium acac oxalato bridged heterodinuclear complex)

IT Crystal structure
Molecular structure
(of ytterbium hydrotris(pyrazol-1-yl)borate chromium acac oxalato bridged heterodinuclear complex)

IT Rare earth carboxylic acid complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., magnetic susceptibility and phosphorescence)

IT 18583-60-3, Potassium hydrotris(pyrazol-1-yl)borate
RL: RCT (Reactant)
(complexation with rare earth ions)

IT 583-52-8, Dipotassium oxalate
RL: RCT (Reactant)
(for prepn. of chromium acac oxalate complex)

IT **212889-82-2P** 212889-85-5P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and magnetic susceptibility)

IT 212889-84-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and magnetic susceptibility and crystal structure)

IT 212889-86-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with hydrotris(pyrazol-1-yl)borate and rare earth ions)

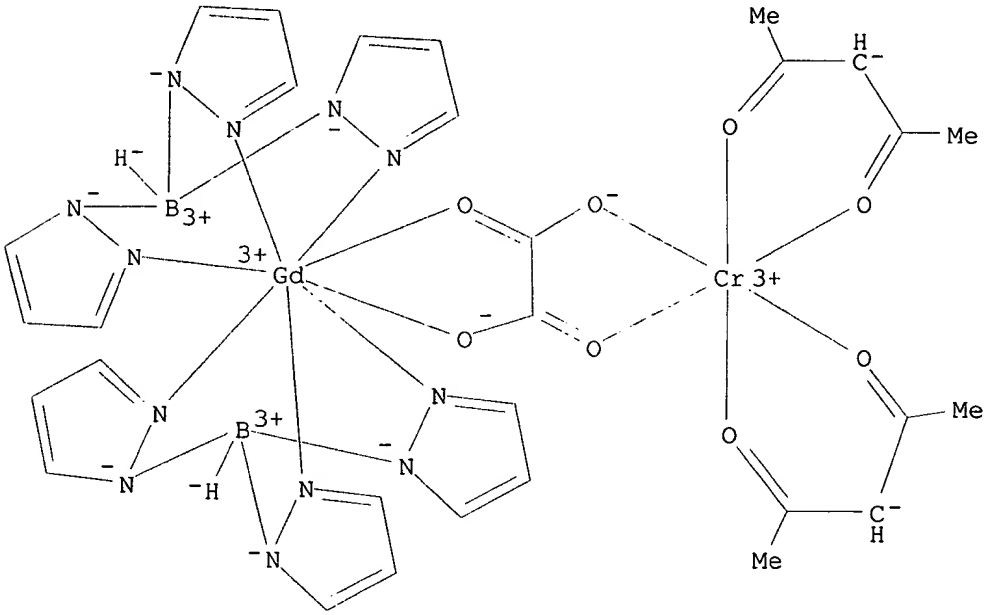
IT **212889-81-1P 212889-83-3P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn., magnetic susceptibility and phosphorescence quenching)

IT **212889-82-2P**

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and magnetic susceptibility)

RN 212889-82-2 HCAPLUS

CN Gadolinium, [bis(2,4-pentanedionato-.kappa.O,.kappa.O')chromium][.mu.-[ethanedioato(2-)-.kappa.O1,.kappa.O2':.kappa.O1',.kappa.O2]]bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)

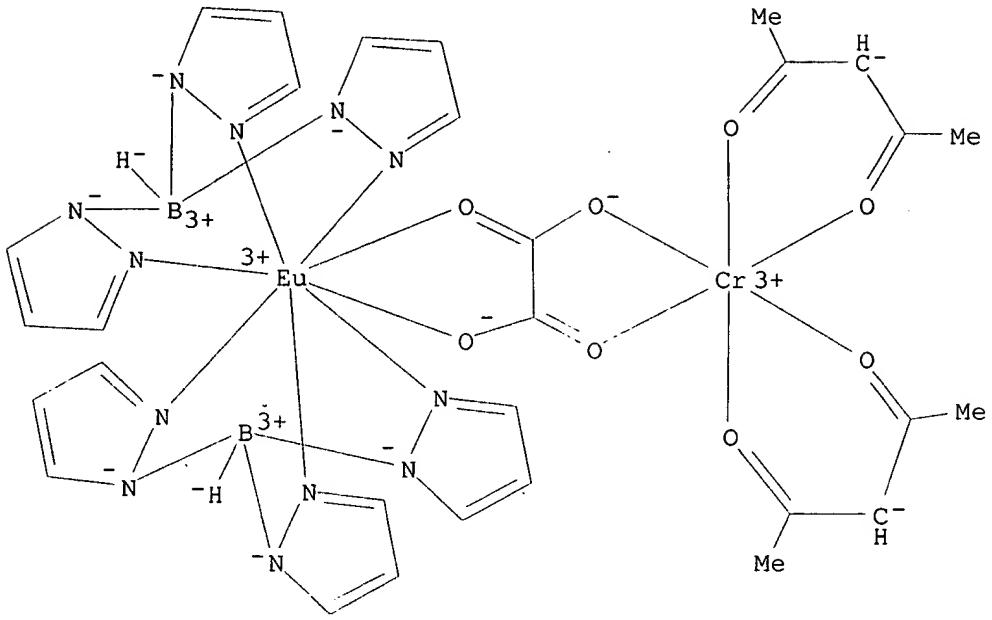


IT **212889-81-1P 212889-83-3P**

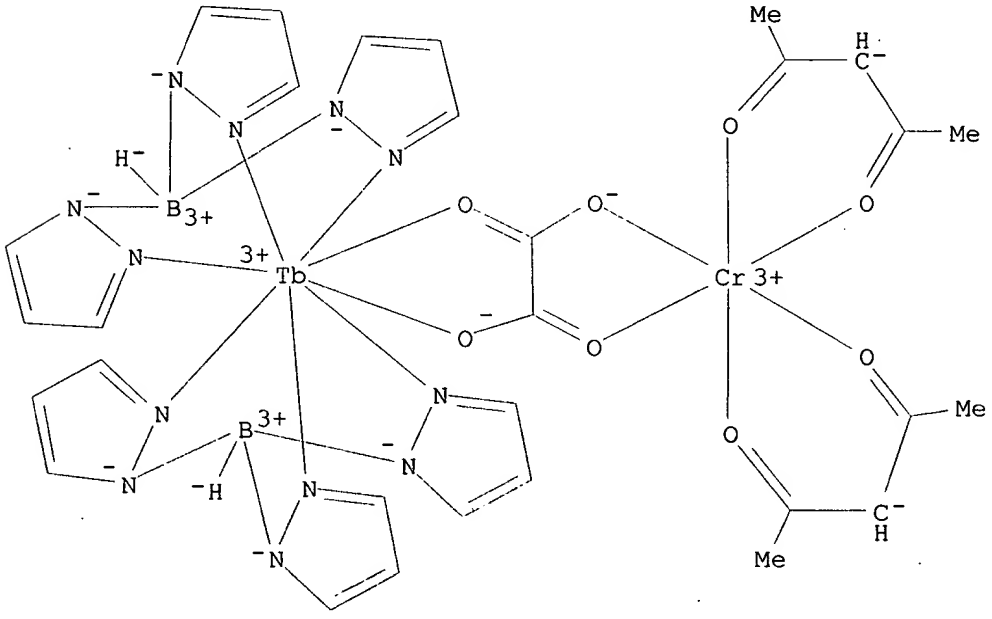
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn., magnetic susceptibility and phosphorescence quenching)

RN 212889-81-1 HCAPLUS

CN Europium, [bis(2,4-pentanedionato-.kappa.O,.kappa.O')chromium][.mu.-[ethanedioato(2-)-.kappa.O1,.kappa.O2':.kappa.O1',.kappa.O2]]bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)



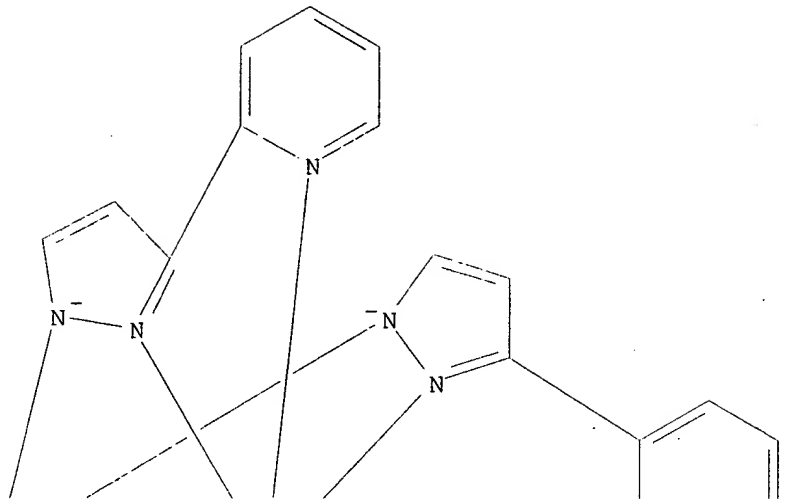
RN 212889-83-3 HCAPLUS
CN Terbium, [bis(2,4-pentanedionato-.kappa.O,.kappa.O')chromium][.mu.-[ethanedioato(2-)-.kappa.O1,.kappa.O2':.kappa.O1',.kappa.O2]]bis[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-(9CI) (CA INDEX NAME)



L16 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1997:646437 HCAPLUS
DN 127:338744

TI **Luminescence** properties of Eu3+, Tb3+, and Gd3+ complexes of the hexadentate N-donor podand tris-[3-(2-pyridyl)pyrazol-1-yl]hydroborate
AU Armaroli, Nicola; Balzani, Vincenzo; Barigelletti, Francesco; Ward, Michael D.; McCleverty, Jon A.
CS Istituto di Fotochimica e Radiazioni d'Alta Energia del CNR, Via Gobetti 101, Bologna, 40129, Italy
SO Chem. Phys. Lett. (1997), 276(5,6), 435-440
CODEN: CHPLBC; ISSN: 0009-2614
PB Elsevier
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The photophys. properties of Gd3+, Eu3+, and Tb3+ complexes of a podand ligand tris[3-(2-pyridyl)-pyrazolyl]hydroborate (L-) were studied in 5 solvents. [Gd(L)(NO3)2] (Gd-A) exhibits only the typical ligand-centered spectroscopy, i.e. **luminescence** and triplet-triplet absorption, whereas Eu-A and Tb-A show only the characteristic metal centered **luminescence**. The podand does not fully surround the metal ion and the ligand-to-metal energy transfer efficiency is high for Tb-A because a large energy gap prevents back energy transfer, but it is small for Eu-A, because of the presence of low energy charge-transfer excited states. Also the 3 bis-podand complexes [LnL2]+ (Ln-B) were studied, but only in CH2Cl2 for soly. reasons.
ST **luminescence** lanthanide hexadentate podand pyridylpyrazolylhydroborate
IT Band gap
Electron transfer
Energy transfer
Excited state
Luminescence
Triplet state
(of lanthanide complexes of hexadentate N-donor podand tris[(pyridyl)pyrazolyl]hydroborate)
IT UV and visible spectra
(transient; of lanthanide complexes of hexadentate N-donor podand tris[(pyridyl)pyrazolyl]hydroborate)
IT UV and visible spectra
(triplet-triplet; of lanthanide complexes of hexadentate N-donor podand tris[(pyridyl)pyrazolyl]hydroborate)
IT Rare earth compounds
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(tris[(pyridyl)pyrazolyl]hydroborate complexes; **luminescence** of)
IT **185199-01-3 185199-02-4 185199-03-5 185199-08-0 185199-10-4 185199-12-6**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(**luminescence** of)
IT **185199-01-3 185199-02-4 185199-03-5 185199-08-0 185199-10-4 185199-12-6**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(**luminescence** of)
RN 185199-01-3 HCAPLUS
CN Europium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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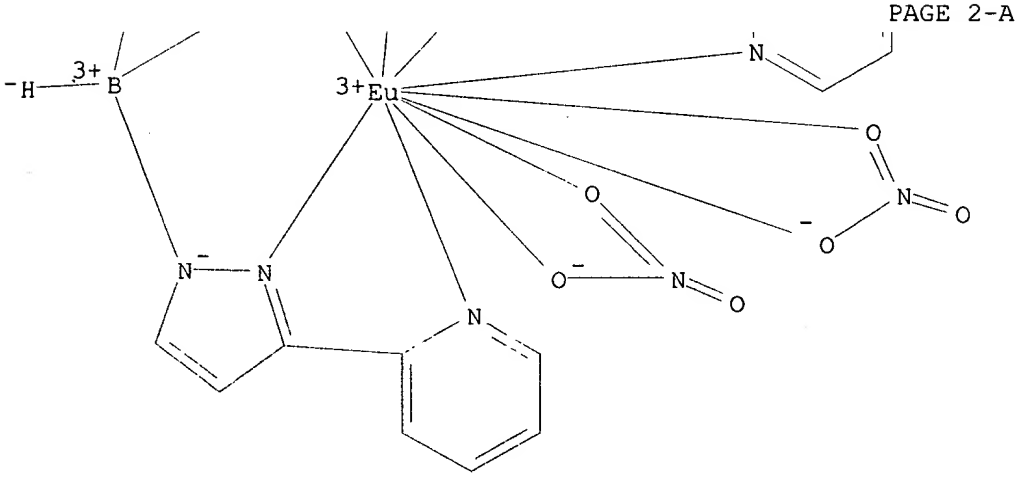
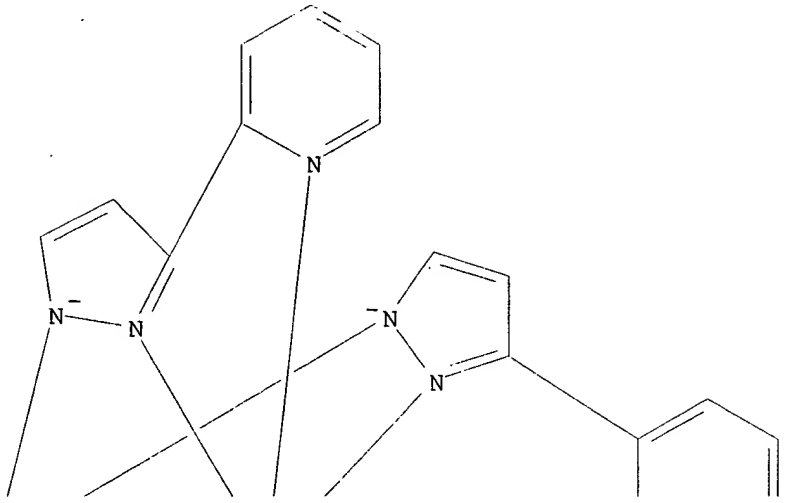
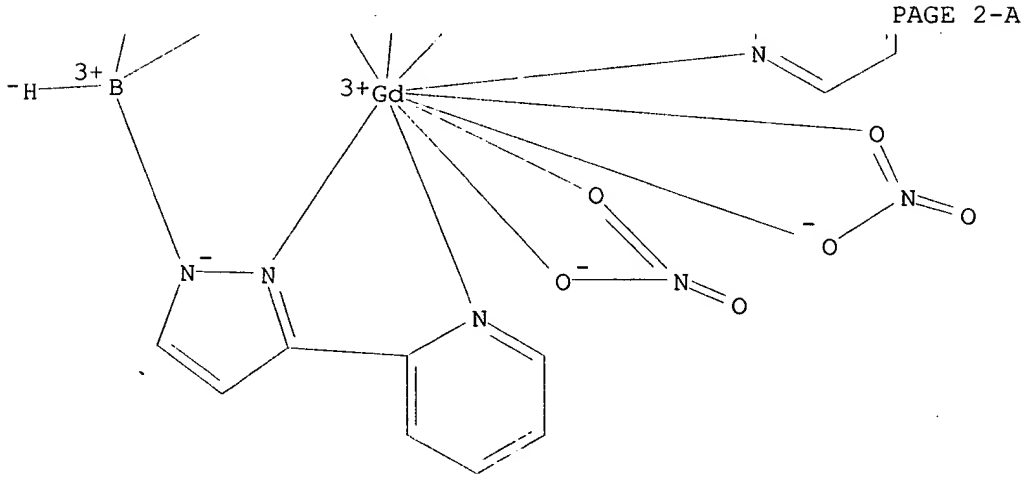


RN 185199-02-4 HCAPLUS
CN Gadolinium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A

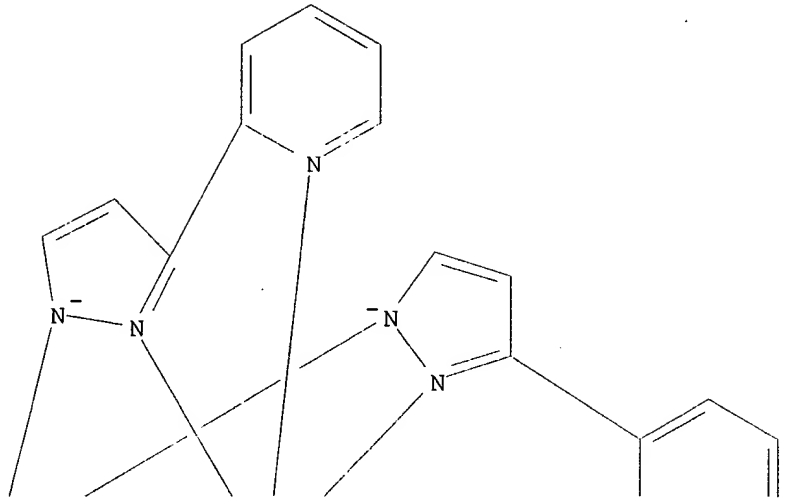


PAGE 2-A



RN 185199-03-5 HCAPLUS
CN Terbium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



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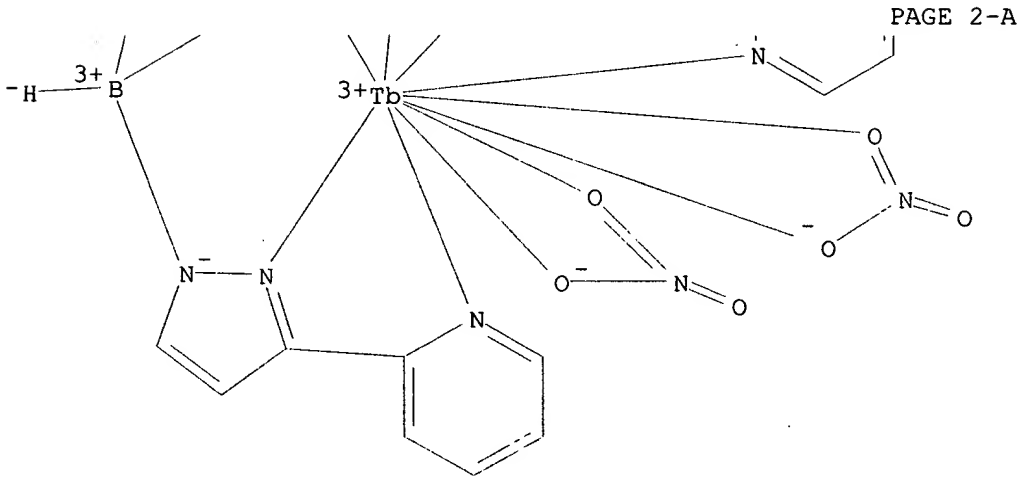
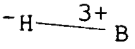


RN 185199-08-0 HCAPLUS
CN Europium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

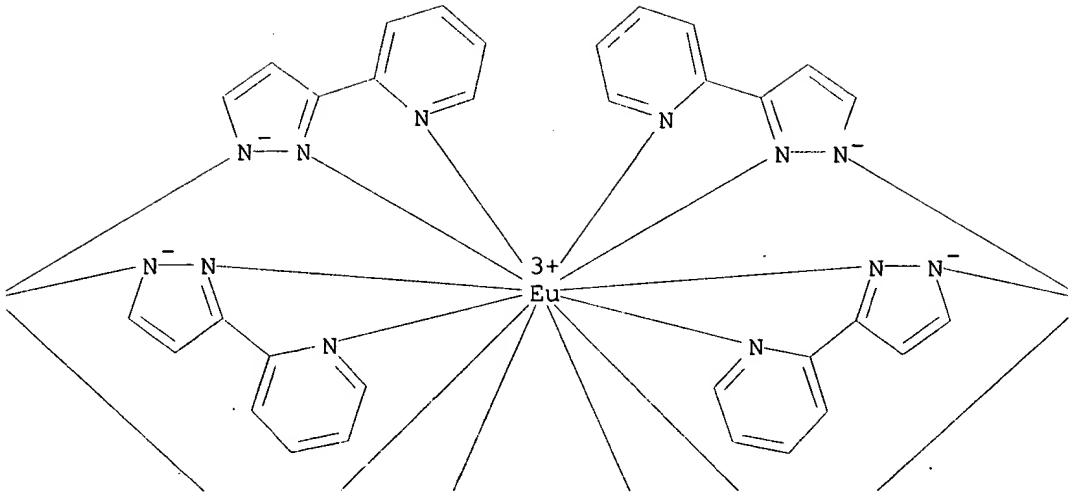
CM 1

CRN 185199-07-9
CMF C48 H38 B2 Eu N18
CCI CCS

PAGE 1-A



PAGE 1-B



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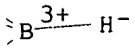

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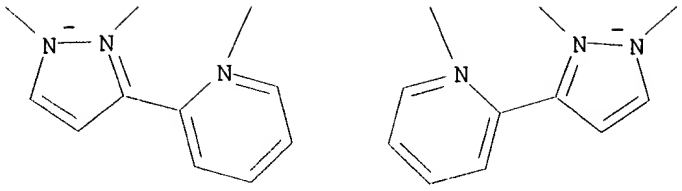
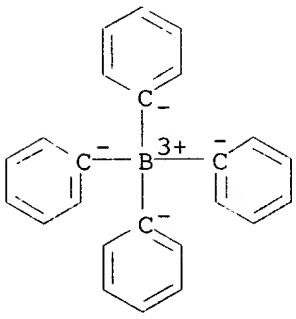


CM 2

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



RN 185199-10-4 HCAPLUS
CN Gadolinium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

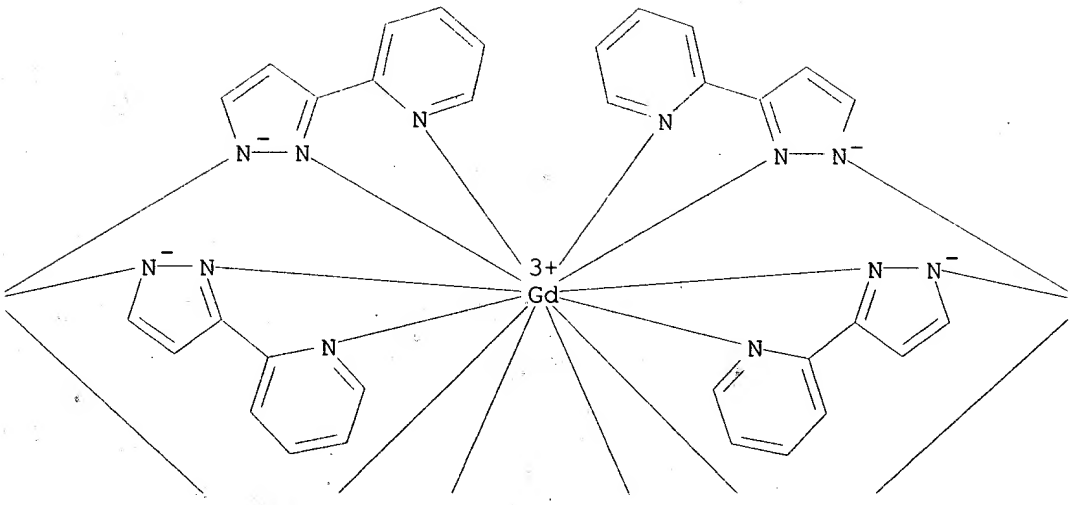
CM 1

CRN 185199-09-1
CMF C48 H38 B2 Gd N18
CCI CCS

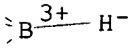
PAGE 1-A

$^{-}H\!\!-\!\!B^{3+}$

PAGE 1-B



PAGE 1-C



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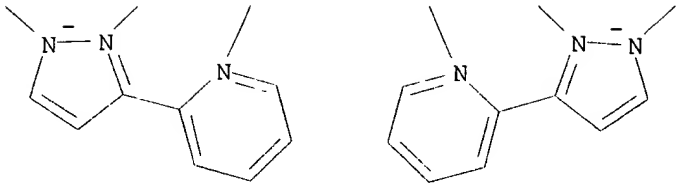
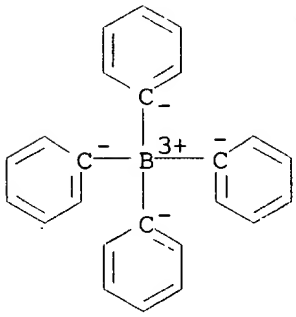


CM 2

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



RN 185199-12-6 HCAPLUS
CN Terbium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

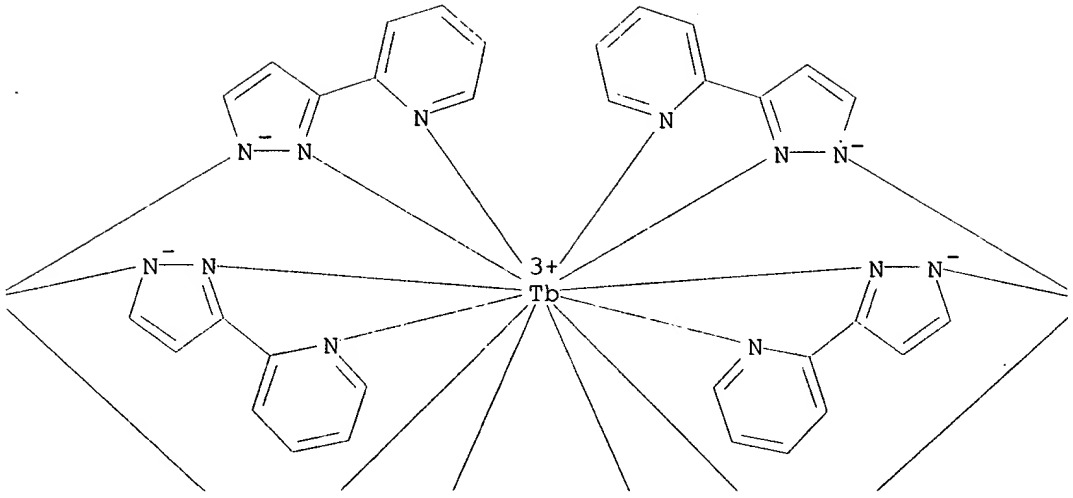
CM 1

CRN 185199-11-5
CMF C48 H38 B2 N18 Tb
CCI CCS

PAGE 1-A

$^{-}H\!-\!\overset{3+}{}\!-B$

PAGE 1-B



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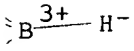

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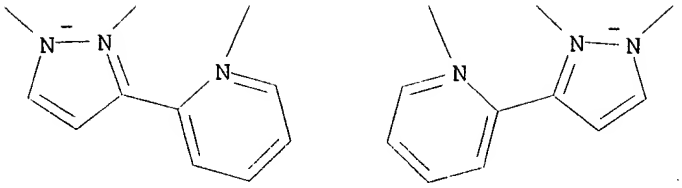
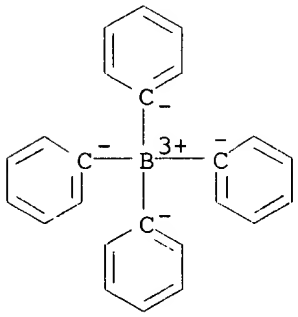


CM 2

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



L16 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1997:594503 HCAPLUS
DN 127:240696
TI Fluorescent compounds
IN Bell, Colin David; Howse, John Hewer Coles; Bosworth, Nigel; James, David

Martin
PA Amersham International PLC, UK
SO U.S., 30 pp. Cont.-in-part of U. S. 5,435,937.
CODEN: USXXAM
DT Patent
LA English
IC ICM C09K011-04
ICS C09K011-06; C07F009-535
NCL 252301180
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 29, 71
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5658494	A	19970819	US 1995-445858	19950522
	US 5435937	A	19950725	US 1993-17674	19930212
	CA 2176525	AA	19961123	CA 1996-2176525	19960514
PRAI	EP 1992-301249		19920214		
	US 1993-17674		19930212		
	US 1995-445858		19950522		

OS MARPAT 127:240696
AB **Radioluminescent** bodies are described which comprise a polymer together with a chelate of a transition or lanthanide or actinide metal ion, which body is transparent or translucent, wherein the body is radioactively labeled with tritium and has the property of **emitting light** or IR radiation by virtue of internally generated ionizing radiation resulting from radioactive decay of the tritium. Fluorescent body composed of a polymer together with a chelate of a transition or lanthanide or actinide metal ion, which body is transparent or translucent and has the property of **emitting light** or IR radiation when subjected to UV or ionizing radiation are also described wherein there is present a siloxane which improves the stability and light output or a free radical scavenger which reduces polymer degrdn. The compd. that results from reacting p-tolyldiphenylphosphine oxide with trivalent terbium tris(dipivaloyl methide) (sic) is also claimed.
ST chelate fluorescent **radioluminescent** compd
IT Fluorescent substances
Scintillators
(fluorescent and **radioluminescent** compds. and compns.)
IT **Luminescent** substances
(radio-; fluorescent and **radioluminescent** compds. and compns.)
IT 893-33-4DP, europium bipyridine complex 7440-53-1DP, Europium, bipyridine trifluoro(naphthyl)butanedione complex **20219-51-6P** 37275-48-2DP, Bipyridine, europium trifluoro(naphthyl)butanedione complex 156882-92-7P 156915-46-7P 156915-57-0P 156952-11-3P 156952-12-4P 156952-13-5P 185448-10-6P 188293-81-4P 195316-76-8P, Tetrakis(2,2,6,6-tetramethyl-3,5-heptanedionato)terbium(III) piperidine salt
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorescent and **radioluminescent** compds. and compns.)
IT 33134-19-9 33134-20-2 36836-37-0 55188-26-6 131006-98-9 156882-91-6 156915-48-9 156915-49-0 156915-50-3 156915-51-4 156915-52-5 156915-53-6 156915-54-7 156915-55-8 156915-56-9 156952-09-9 156952-10-2
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(fluorescent and **radioluminescent** compds. and compns.)

IT 110-89-4, Piperidine, reactions 120-46-7, Dibenzoyl methane 541-09-3, Uranyl acetate 603-35-0, Triphenylphosphine, reactions 893-33-4 999-97-3, Hexamethyldisilazane 1031-93-2, (4-Methylphenyl)diphenyl phosphine 1073-67-2, P-Chlorostyrene 1118-71-4, 2,2,6,6-Tetramethyl-3,5-heptanedione 1499-21-4, Diphenyl-phosphinic acid chloride 6840-28-4, p-Tolyldiphenylphosphine oxide 10025-76-0, Europium trichloride 10361-82-7, Samarium chloride 15492-51-0, Tris(2,2,6,6-tetramethyl-3,5-heptanedionato)terbium 15522-69-7, Tris(2,2,6,6-tetramethyl-3,5-heptanedionato)dysprosium(III) 26628-22-8, Sodium azide 37275-48-2, Bipyridyl
RL: RCT (Reactant)
(fluorescent and **radioluminescent** compds. and compns.)

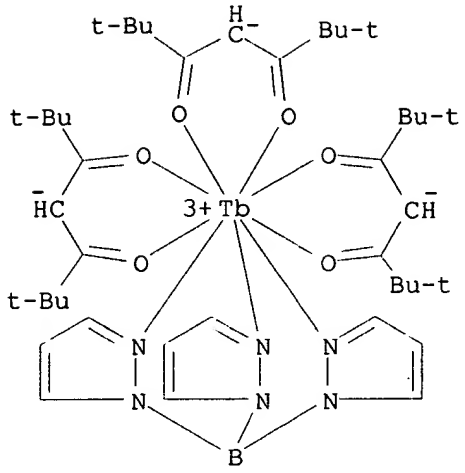
IT 2960-37-4P 4129-17-3P, Diphenylphosphinic azide 14552-07-9P 15492-50-9P 19269-14-8P 24082-36-8P, Diphenyl-phosphonimido-triphenyl phosphorane 31239-06-2P 40538-11-2P, p-Styryldiphenylphosphine 47182-95-6P 80233-27-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(fluorescent and **radioluminescent** compds. and compns.)

IT 188293-72-3P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorescent and **radioluminescent** compds. and compns.)

IT 119-64-2, Tetralin. 3390-61-2, Pentaphenyltrimethyltrisiloxane. 3982-82-9 9003-53-6, Polystyrene 9003-53-6D, Polystyrene, tritiated 9017-21-4, Polyvinyltoluene 10028-17-8, Tritium, uses 18666-24-5D, Ethyltriphenylsilane, tritiated 24936-41-2, 4-Methylstyrene homopolymer 24936-44-5, 4-Methoxystyrene homopolymer 25232-08-0, 4-Vinyl-biphenyl homopolymer 25990-16-3, 2,4-Dimethylstyrene homopolymer 26009-55-2, 4-t-Butylstyrene homopolymer 27756-35-0, 2,4,6-Trimethylstyrene homopolymer 62125-00-2D, Diphenylethylbenzene., tritiated
RL: TEM (Technical or engineered material use); USES (Uses)
(fluorescent and **radioluminescent** compds. and compns.)

IT **20219-51-6P**
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorescent and **radioluminescent** compds. and compns.)

RN 20219-51-6 HCAPLUS
CN Terbium, tris(2,2,6,6-tetramethyl-3,5-heptanedionato-.kappa.O,.kappa.O')[1,1',1''-borylidynetris[1H-pyrazole-.kappa.N2]]- (9CI) (CA INDEX NAME)



L16 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1997:441000 HCAPLUS
DN 127:144291
TI Lanthanide complexes of the tetradentate N-donor ligand dihydrobis[3-(2-pyridyl)pyrazolyl]borate and the terdentate N-donor ligand 2,6-bis(1H-pyrazol-3-yl)pyridine: syntheses, crystal structures and solution structures based on **luminescence** lifetime studies
AU Bardwell, David A.; Jeffery, John C.; Jones, Peter L.; McCleverty, Jon A.; Psillakis, Elefteria; Reeves, Zoe; Ward, Michael D.
CS School of Chemistry, University of Bristol, Bristol, BS8 1TS, UK
SO J. Chem. Soc., Dalton Trans. (1997), (12), 2079-2086
CODEN: JCDTBI; ISSN: 0300-9246
PB Royal Society of Chemistry
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
AB Lanthanide complexes of two polydentate N-donor ligands contg. a mixt. of pyridyl and pyrazolyl donors were prepd. Dihydrobis[3-(2-pyridyl)pyrazolyl]borate (L1)- is a tetradentate ligand with two bidentate chelating pyridyl/pyrazolyl arms linked by an apical BH2 group; 2,6-bis(1H-pyrazol-3-yl)pyridine (L2) is a terdentate chelating ligand reminiscent of terpyridine. Reaction of L1 with lanthanide salts gave [M(L1)2X]n+; the crystal structures of [Eu(L1)2(DMF)][ClO4].cntdot.2.5CH2Cl2, [Tb(L1)2(NO3)].cntdot.2CH2Cl2 and [Tb(L1)2(H2O)][L1].cntdot.H2O.cntdot.0.5CH2Cl2 were detd. and all contain two tetradentate ligands L1 and an ancillary ligand X [DMF, nitrate or water] whose nature depends on the reaction/recrystn. conditions to complete the coordination sphere. **Luminescence** studies of [Tb(L1)2(NO3)] in water or D2O and MeOH or CD3OD showed that in methanol the solvation no. q is .apprxeq. 1.8, consistent with displacement of nitrate by the solvent; however in water q .apprxeq. 4.5, indicating addnl. displacement of some of the N-donor heterocyclic rings of L1 by coordinating water mols. Reaction of L2 with lanthanide salts afforded [M(L2)3]3+, all isolated as their hexafluorophosphate salts. The crystal structures of three of these (M = Eu, Gd or Ho) showed that they are isostructural and isomorphous, with tricapped trigonal-prismatic nine-coordinate geometries similar to that of [M(terpy)3]3+ (terpy = 2,2':6',2''-terpyridine). **Luminescence** studies of [Tb(L2)3][PF6]3 gave a solvation no. q of 0.6 in methanol,

which is small enough to be accounted for by 2nd-sphere solvation effects alone and therefore suggests that the nine-coordinate structure is retained in methanol soln. However, in water, q is again .apprxeq. 4.5, due to displacement of some of the donor groups of the L2 ligands by water.

ST crystal structure rare earth dihydrobispyridylpyrazolylborato bispyrazolylpyridine; rare earth dihydrobispyridylpyrazolylborato bispyrazolylpyridine prepn structure; hydrobispyridylpyrazolylborate europium terbium complex prepn structure; pyridylpyrazolylborate europium terbium complex prepn structure; pyrazolylpyridine rare earth complex prepn structure; terbium dihydrobispyridylpyrazolylborato bispyrazolylpyridine prepn structure solvation; **luminescence** lifetime terbium dihydrobispyridylpyrazolylborato bispyrazolylpyridine; solvation number terbium dihydrobispyridylpyrazolylborato bispyrazolylpyridine

IT Excited state
(lifetime; soln. structure of terbium dihydrobis(pyridylpyrazolyl)borato and bis(pyrazolyl)pyridine complexes based on **luminescence** lifetime)

IT Crystal structure
Molecular structure
(of rare earth dihydrobis(pyridylpyrazolyl)borato and bis(pyrazolyl)pyridine complexes)

IT Rare earth complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal and soln. structures of rare earth dihydrobis(pyridylpyrazolyl)borato and bis(pyrazolyl)pyridine complexes)

IT Solvation number
(soln. structure of terbium dihydrobis(pyridylpyrazolyl)borato and bis(pyrazolyl)pyridine complexes based on **luminescence** lifetime)

IT 63285-53-0, 2,6-Bis(1H-pyrazol-3-yl)pyridine
RL: RCT (Reactant)
(for prepn. of rare earth bis(pyrazolyl)pyridine complexes)

IT 13762-51-1, Potassium tetrahydroborate 75415-03-1, 3-(2-Pyridyl)pyrazole
RL: RCT (Reactant)
(for prepn. of rare earth dihydrobis(pyridylpyrazolyl)borato complexes)

IT 192885-45-3P, Potassium dihydrobis[3-(2-pyridyl)pyrazolyl]borate
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(for prepn. of rare earth dihydrobis(pyridylpyrazolyl)borato complexes)

IT **192885-28-2P 192885-30-6P 192885-35-1P**
192885-37-3P 192885-39-5P 192885-43-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure)

IT **192885-27-1P 192885-34-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mol. structure)

IT 192885-41-9P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., **luminescence** lifetimes and soln. structures)

IT **192885-29-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. and soln. structures and **luminescence** lifetimes)

IT **192885-28-2P 192885-30-6P 192885-35-1P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure)

RN 192885-28-2 HCAPLUS

CN Europium(1+), bis[dihydrobis[2-(1H-pyrazol-3-yl-

.kappa.N1)pyridinato]borato(1-)](N,N-dimethylformamide-.kappa.O)-, perchlorate, compd. with dichloromethane (2:5) (9CI) (CA INDEX NAME)

CM 1

CRN 75-09-2
CMF C H2 Cl2

CM 2

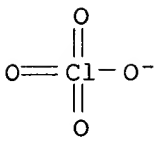
CRN 192885-27-1
CMF C35 H35 B2 Eu N13 O . Cl O4

CM 3

CRN 192885-26-0
CMF C35 H35 B2 Eu N13 O
CCI CCS

CM 4

CRN 14797-73-0
CMF Cl O4

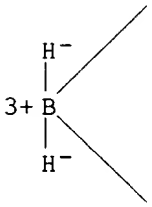


RN 192885-30-6 HCAPLUS
CN Terbium, bis[dihydrobis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)](nitrato-.kappa.O,.kappa.O')-, compd. with dichloromethane (1:2) (9CI) (CA INDEX NAME)

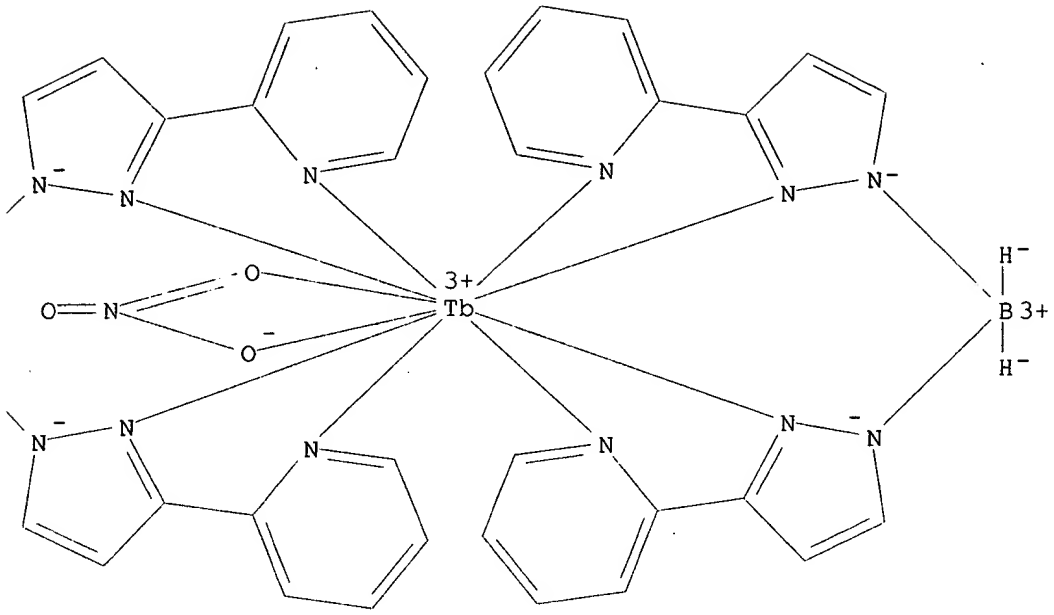
CM 1

CRN 192885-29-3
CMF C32 H28 B2 N13 O3 Tb
CCI CCS

PAGE 1-A



PAGE 1-B



CM 2

CRN 75-09-2
CMF C H2 Cl2

$Cl-CH_2-Cl$

RN 192885-35-1 HCAPLUS
CN Terbium(1+), aquabis[dihydrobis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]-, (T-4)-dihydrobis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borate(1-), compd. with dichloromethane (2:1), dihydrate (9CI) (CA INDEX NAME)

CM 1

CRN 75-09-2
CMF C H2 Cl2

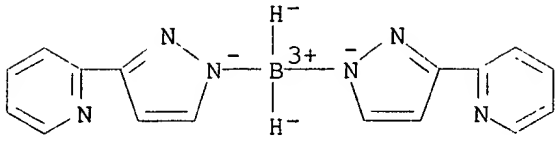
$Cl-CH_2-Cl$

CM 2

CRN 192885-33-9
CMF C32 H30 B2 N12 O Tb . C16 H14 B N6

CM 3

CRN 192885-32-8
CMF C16 H14 B N6
CCI CCS
CDES 7:T-4



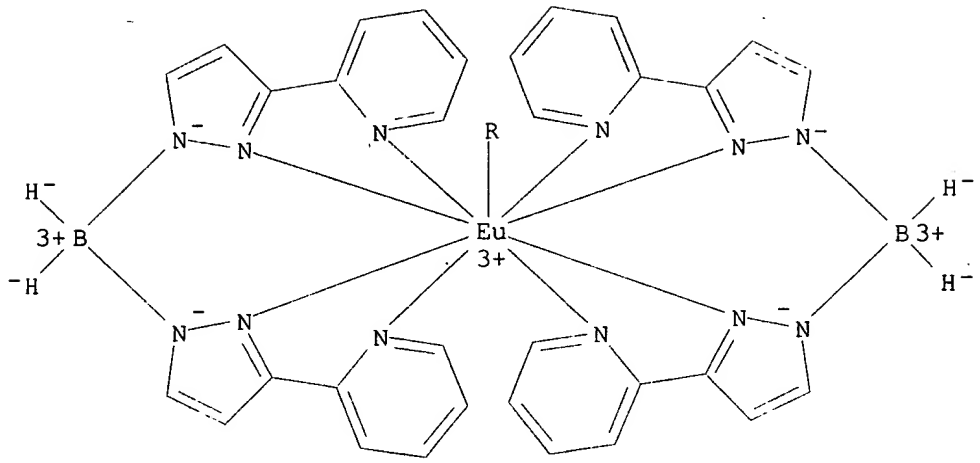
CM 4

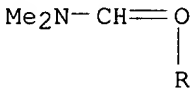
CRN 192885-31-7
CMF C32 H30 B2 N12 O Tb
CCI CCS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **192885-27-1P 192885-34-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mol. structure)
RN 192885-27-1 HCAPLUS
CN Europium(1+), bis[dihydrobis[2-(1H-pyrazol-3-yl-
.kappa.N1)pyridinato]borato(1-)](N,N-dimethylformamide-.kappa.O)-,
perchlorate (9CI) (CA INDEX NAME)

CM 1

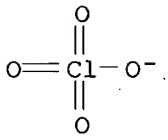
CRN 192885-26-0
CMF C35 H35 B2 Eu N13 O
CCI CCS





CM 2

CRN 14797-73-0
CMF Cl O4



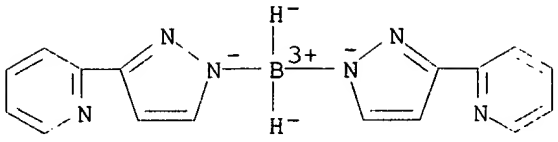
RN 192885-34-0 HCAPLUS
CN Terbium(1+), aquabis[dihydrobis[2-(1H-pyrazol-3-yl-
.kappa.N1)pyridinato]borato(1-)]-, (T-4)-dihydrobis[2-(1H-pyrazol-3-yl-
.kappa.N1)pyridinato]borate(1-), monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 192885-33-9
CMF C32 H30 B2 N12 O Tb . C16 H14 B N6

CM 2

CRN 192885-32-8
CMF C16 H14 B N6
CCI CCS
CDES 7:T-4

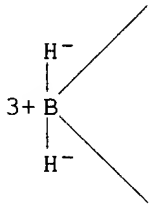


CM 3

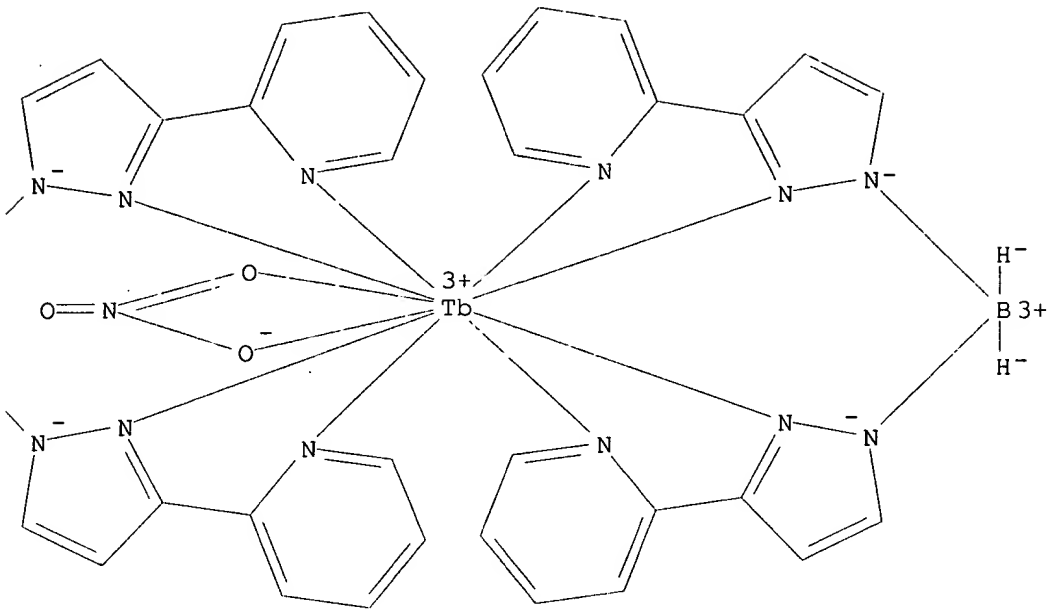
CRN 192885-31-7
CMF C32 H30 B2 N12 O Tb
CCI CCS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **192885-29-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. and soln. structures and **luminescence** lifetimes)
RN 192885-29-3 HCAPLUS
CN Terbium, bis[dihydrobis[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)](nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L16 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1996:734439 HCAPLUS
DN 126:69292
TI Lanthanide Complexes of the Hexadentate N-donor Podand Tris[3-(2-pyridyl)pyrazolyl]hydroborate: Solid-State and Solution Properties
AU Jones, Peter L.; Amoroso, Angelo J.; Jeffery, John C.; McCleverty, Jon A.; Psillakis, Elefteria; Rees, Leigh H.; Ward, Michael D.
CS School of Chemistry, University of Bristol, Bristol, BS8 1TS, UK
SO Inorg. Chem. (1997), 36(1), 10-18
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 8, 75
AB The hexadentate N6-donor podand tris[3-(2-pyridyl)pyrazolyl]hydroborate (TpPy) contains 2-pyridyl fragments attached to the pyrazolyl C3-positions such that each arm is a bidentate chelate. Three series of lanthanide(III) complexes were prepd.: [M(TpPy)(MeOH)2F][PF6] (series A), [M(TpPy)(NO3)2] (series B), and [M(TpPy)2][BPh4] (series C). Crystallog. studies showed that series A and B have a 1:1 metal:TpPy ratio, with the metal ion lying within the podand cavity and the remaining coordination sites occupied by solvent mols. and/or counterions to give 9-coordination (A, with one fluoride and two MeOH ligands) or 10-coordination (B, with two bidentate nitrate ligands). The C complexes were prepd. in the absence of any coordinating anions and have a 1:2 metal:TpPy ratio with an unusual icosahedral geometry arising from coordination of the 12 N donors from two interleaved podands. Soln. cond. studies on the B complexes show that in H2O the nitrates dissoc. to give [M(TpPy)(H2O)q](NO3)2; the relaxivity of [Gd(TpPy)(NO3)2] in H2O is 4.4 s-1 mM-1, a value comparable to those of clin. useful MRI contrast enhancement agents. Comparison of

emission lifetimes of [M(TpPy)(NO3)2] (M = Eu, Tb) in H2O/D2O and MeOH/CD3OD give values for q, the no. of coordinated solvent mols., of 3.6 (water) and 2.6 (MeOH). The C complex [Tb(TpPy)2][BPh4] also has q = 2.6 in MeOH, suggesting that partial ligand dissocn. allows access of solvent mols. to the metal coordination sphere.

ST lanthanide trispyridylpyrazolylhydroborate complex prepn crystal structure; pyridylpyrazolylhydroborate tris podand ligand lanthanide prepn; **luminescence** lanthanide trispyridylpyrazolylhydroborate; MRI contrast agent prototype lanthanide trispyridylpyrazolylhydroborate; coordination trispyridylpyrazolylhydroborate podand lanthanide; NMR relaxivity lanthanide trispyridylpyrazolylhydroborate

IT MRI (magnetic resonance imaging)
(lanthanide tris[3-(2-pyridyl)pyrazolyl]hydroborate complexes as prototype MRI contrast enhancement agents)

IT Coordination number
Crystal structure
Luminescence
Molecular structure
(of lanthanide tris[3-(2-pyridyl)pyrazolyl]hydroborate complexes)

IT Rare earth complexes
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and structure of lanthanide tris[3-(2-pyridyl)pyrazolyl]hydroborate complexes)

IT Podands
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of tris[3-(2-pyridyl)pyrazolyl]hydroborate podand ligand for lanthanides)

IT 161095-31-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(for prepn. of lanthanide tris[3-(2-pyridyl)pyrazolyl]hydroborate complexes)

IT 13762-51-1, Potassium tetrahydroborate 75415-03-1, 3-(2-Pyridyl)pyrazole
RL: RCT (Reactant)
(for prepn. of tris[3-(2-pyridyl)pyrazolyl]hydroborate ligand)

IT **185199-00-2P 185199-02-4P 185199-04-6P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and NMR relaxivity of)

IT **171198-27-9P 185199-13-7P** 185199-16-0P
185199-18-2P 185199-20-6P 185199-24-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure of)

IT **161095-30-3P 171198-26-8P** 185198-99-6P
185199-08-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mol. structure of)

IT **185198-89-4P 185198-91-8P 185198-93-0P**
185198-95-2P 185198-97-4P 185198-98-5P 185199-06-8P
185199-10-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

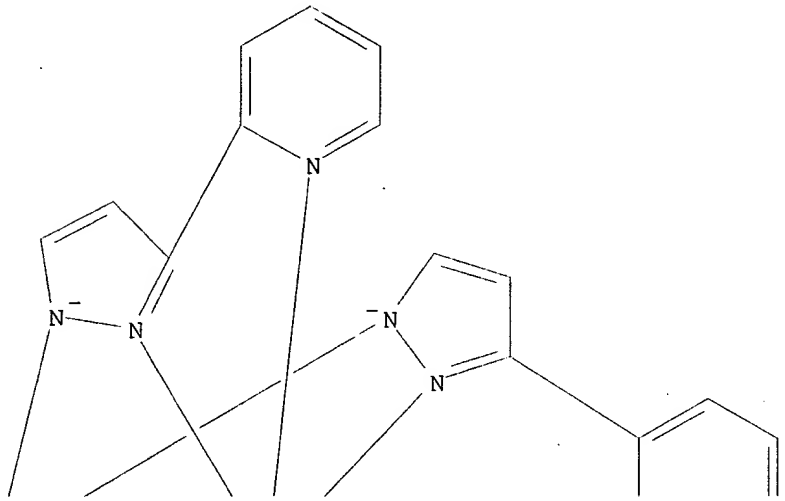
IT **185199-03-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., **luminescence**, NMR relaxivity, and soln. cond. of)

IT **185199-12-6P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., **luminescence**, and soln. cond. of)

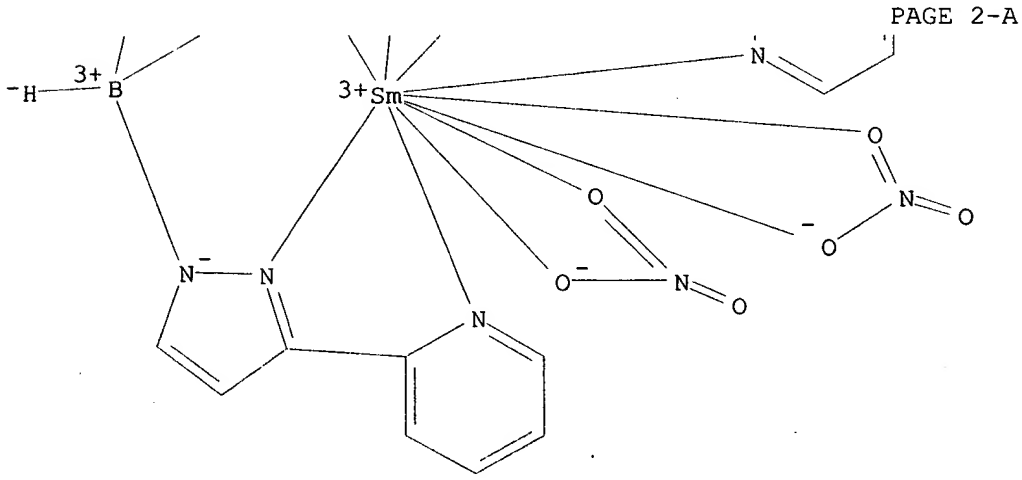
IT **185199-01-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., mol. structure, **luminescence**, NMR relaxivity, and soln. cond. of)

IT **185199-00-2P 185199-02-4P 185199-04-6P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and NMR relaxivity of)
RN 185199-00-2 HCAPLUS
CN Samarium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A

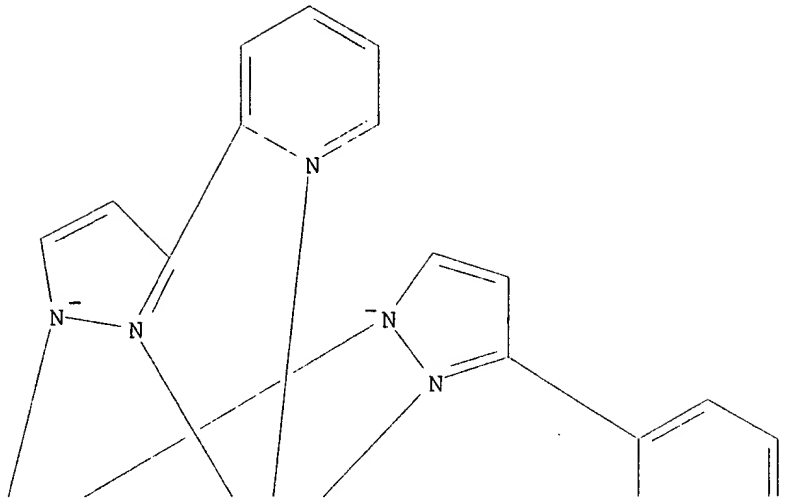


PAGE 2-A

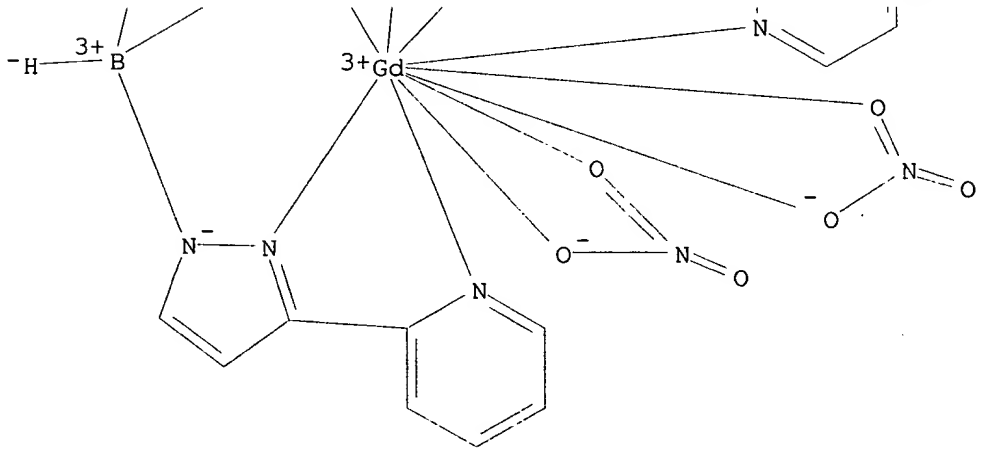


RN 185199-02-4 HCAPLUS
CN Gadolinium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A

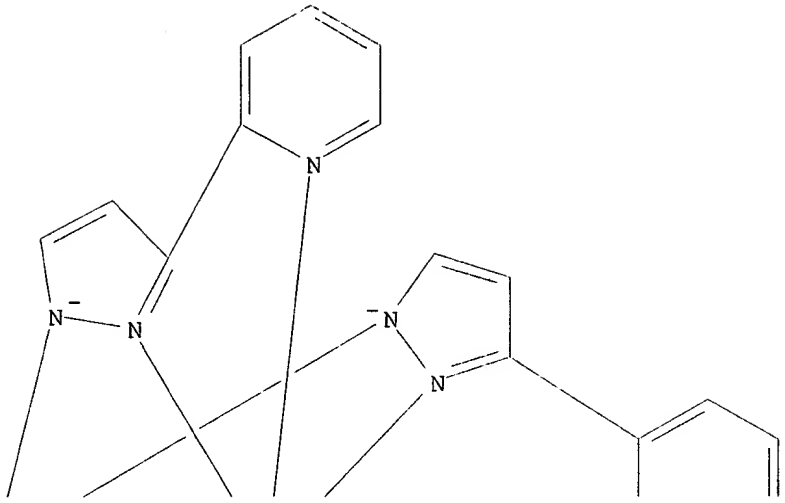


PAGE 2-A

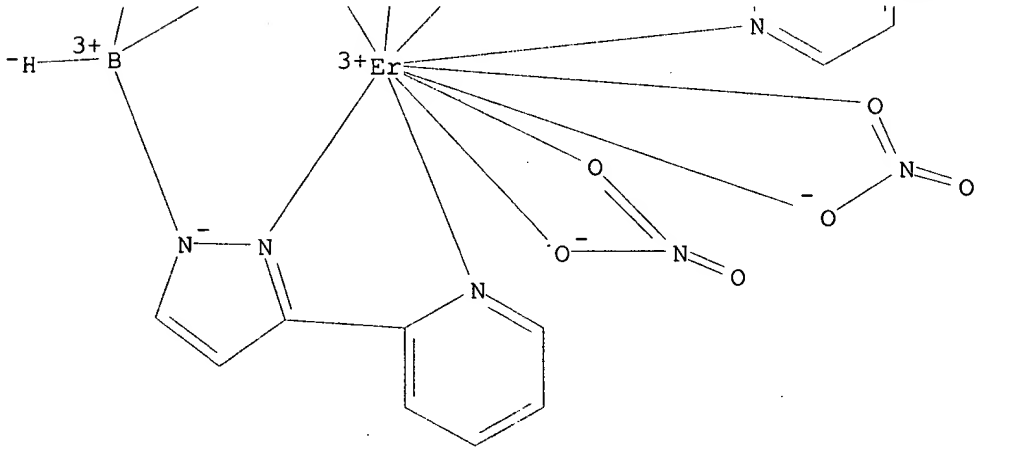


RN 185199-04-6 HCAPLUS
CN Erbium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

PAGE 1-A



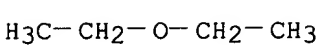
PAGE 2-A



IT **171198-27-9P 185199-13-7P 185199-18-2P**
185199-20-6P 185199-24-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure of)
RN 171198-27-9 HCAPLUS
CN Samarium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl-
.kappa.N1)pyridinato]borato(1-)]-, tetraphenylborate, compd. with
1,1'-oxybis[ethane] (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 60-29-7
CMF C4 H10 O



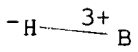
CM 2

CRN 171198-26-8
CMF C48 H38 B2 N18 Sm . C24 H20 B

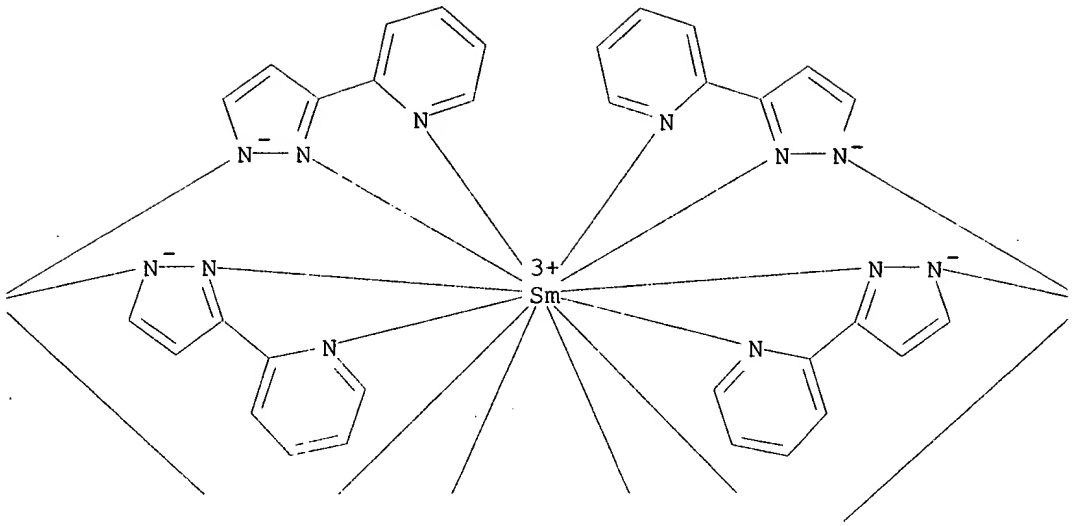
CM 3

CRN 171198-25-7
CMF C48 H38 B2 N18 Sm
CCI CCS

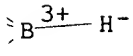
PAGE 1-A

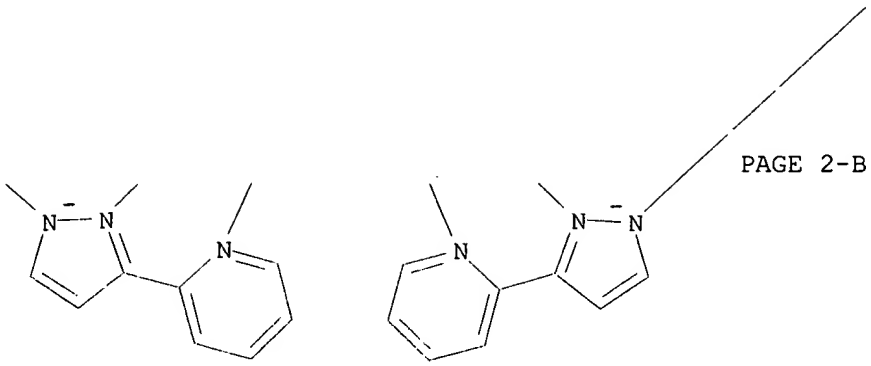


PAGE 1-B



PAGE 1-C

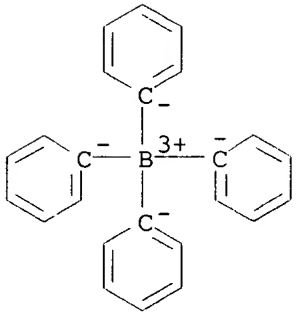




PAGE 2-B

CM 4

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



RN 185199-13-7 HCAPLUS
CN Europium, fluoro[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]bis(methanol)-, hexafluorophosphate(1-), compd. with methanol and 1,1'-oxybis[ethane] (3:2:2), tetrahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 67-56-1
CMF C H4 O

H_3C-OH

CM 2

CRN 60-29-7
CMF C4 H10 O

$H_3C-CH_2-O-CH_2-CH_3$

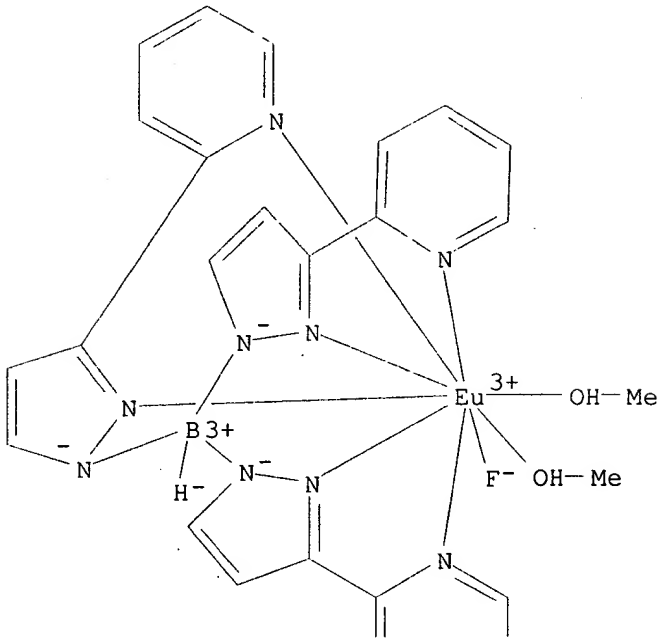
CM 3

CRN 161095-30-3
CMF C26 H27 B Eu F N9 O2 . F6 P

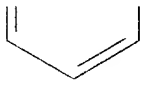
CM 4

CRN 161095-29-0
CMF C26 H27 B Eu F N9 O2
CCI CCS

PAGE 1-A

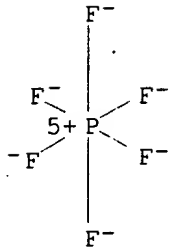


PAGE 2-A



CM 5

CRN 16919-18-9
CMF F6 P
CCI CCS

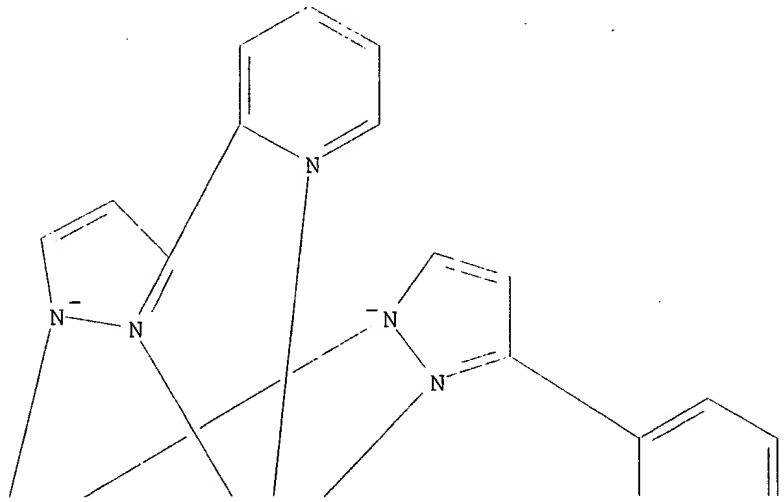


RN 185199-18-2 HCAPLUS
CN Europium, [hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')-, compd. with N,N-dimethylformamide and 1,1'-oxybis[ethane] (2:2:1) (9CI) (CA INDEX NAME)

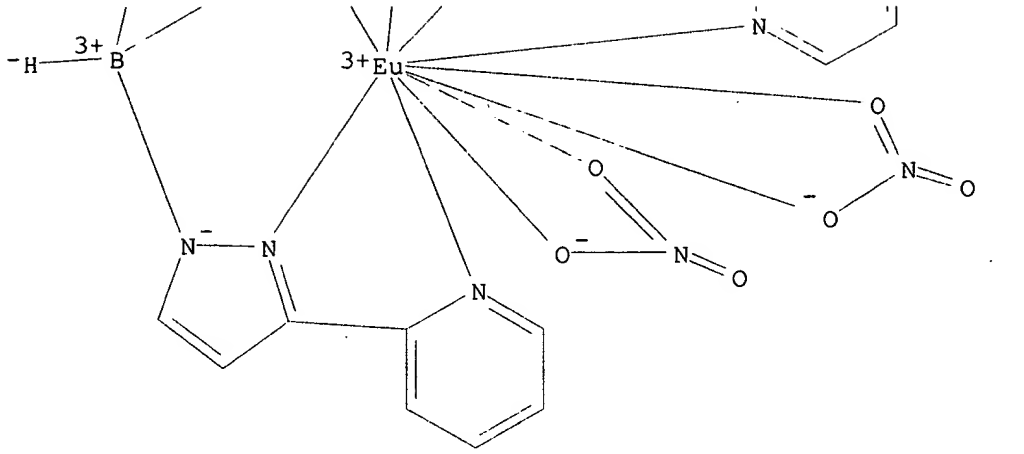
CM 1

CRN 185199-01-3
CMF C24 H19 B Eu N11 O6
CCI CCS

PAGE 1-A

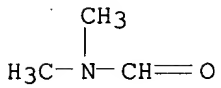


PAGE 2-A



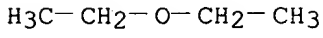
CM 2

CRN 68-12-2
CMF C3 H7 N O



CM 3

CRN 60-29-7
CMF C4 H10 O



RN 185199-20-6 HCAPLUS
CN Erbium, [hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')-, compd. with N,N-dimethylformamide and 1,1'-oxybis[ethane] (2:2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 185199-04-6
CMF C24 H19 B Er N11 O6
CCI CCS

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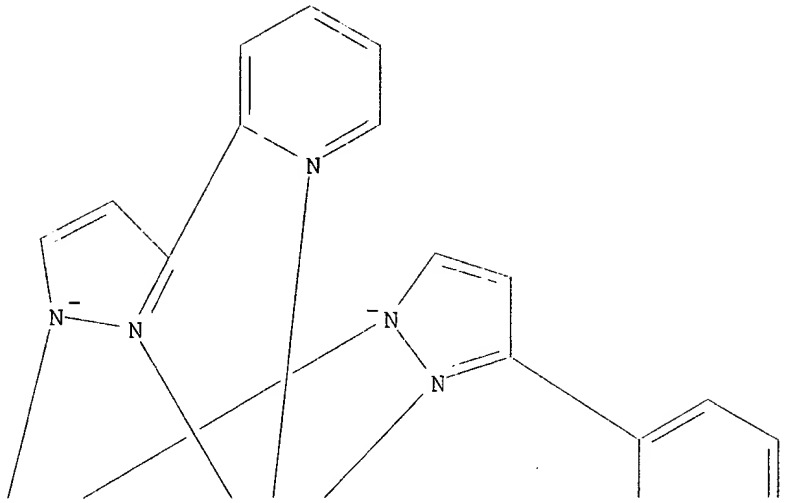
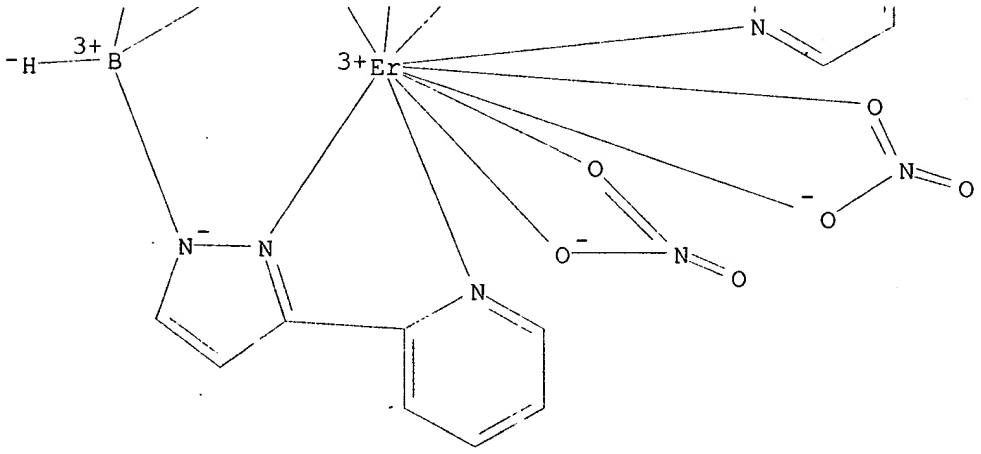
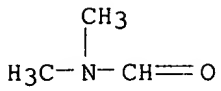


PAGE 2-A



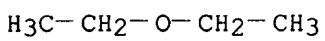
CM 2

CRN 68-12-2
CMF C3 H7 N O



CM 3

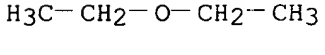
CRN 60-29-7
CMF C4 H10 O



RN 185199-24-0 HCAPLUS
CN Europium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]-, tetraphenylborate(1-), compd. with 1,1'-oxybis[ethane] (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 60-29-7
CMF C4 H10 O



CM 2

CRN 185199-08-0
CMF C48 H38 B2 Eu N18 . C24 H20 B

CM 3

CRN 185199-07-9
CMF C48 H38 B2 Eu N18
CCI CCS

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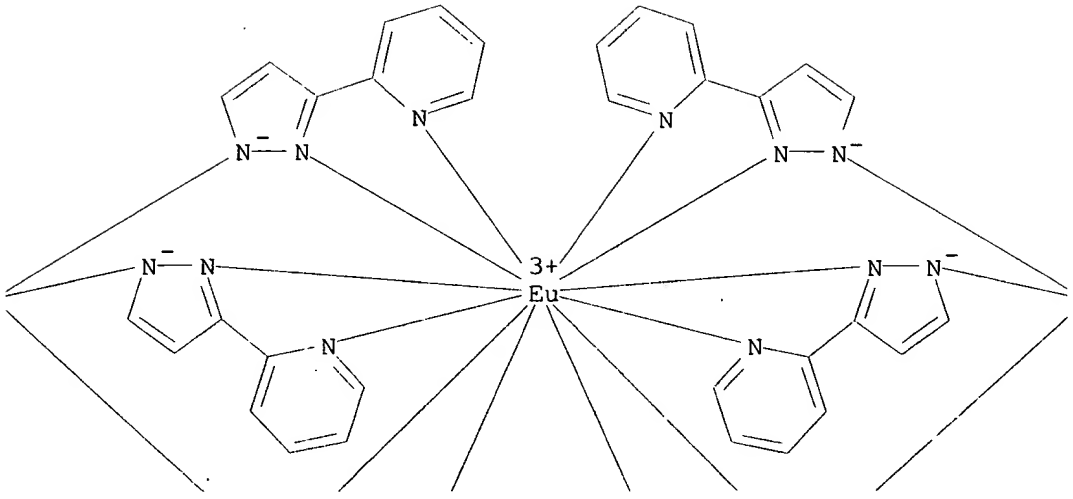
PAGE 1-B



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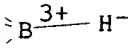
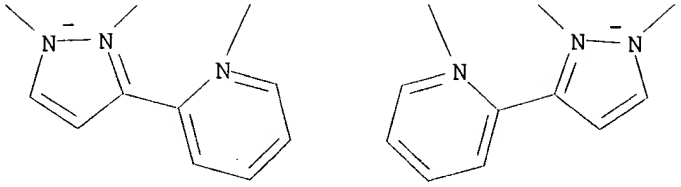
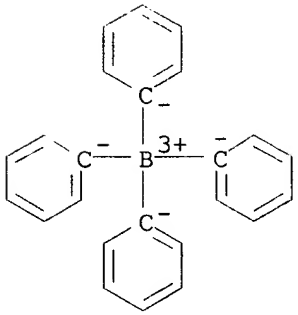


PAGE 2-B



CM 4

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



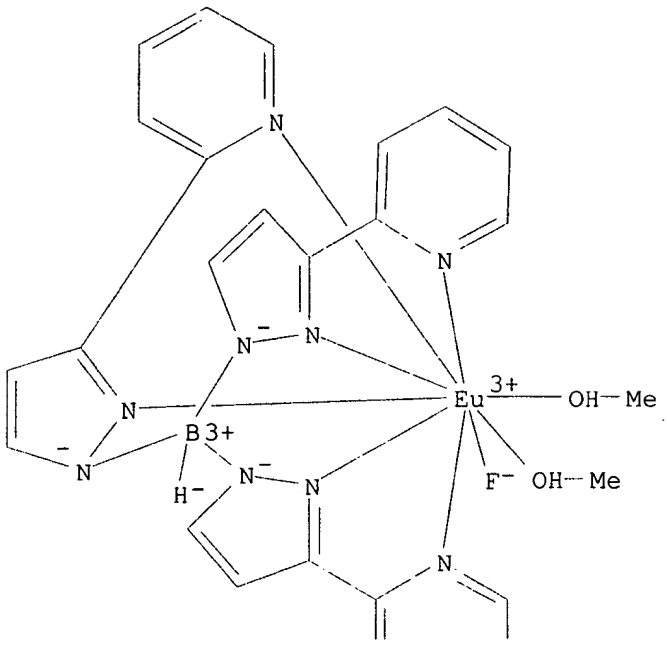
IT **161095-30-3P 171198-26-8P 185199-08-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and mol. structure of)
RN 161095-30-3 HCAPLUS
CN Europium(1+), fluoro[hydrotris[2-(1H-pyrazol-3-yl-
.kappa.N1)pyridinato]borato(1-)]bis(methanol)-, hexafluorophosphate(1-)

(9CI) (CA. INDEX NAME)

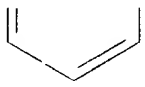
CM 1

CRN 161095-29-0
CMF C26 H27 B Eu F N9 O2
CCI CCS

PAGE 1-A

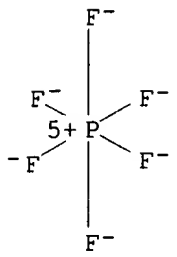


PAGE 2-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



RN 171198-26-8 HCAPLUS
CN Samarium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl-
:kappa.N1)pyridinato]borato(1-)]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 171198-25-7
CMF C48 H38 B2 N18 Sm
CCI CCS

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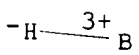
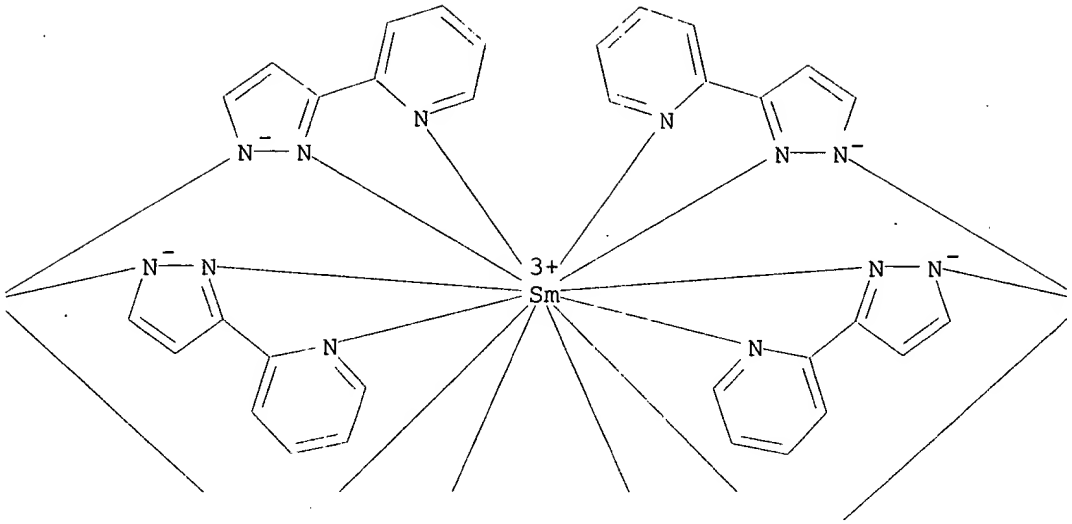
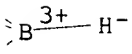
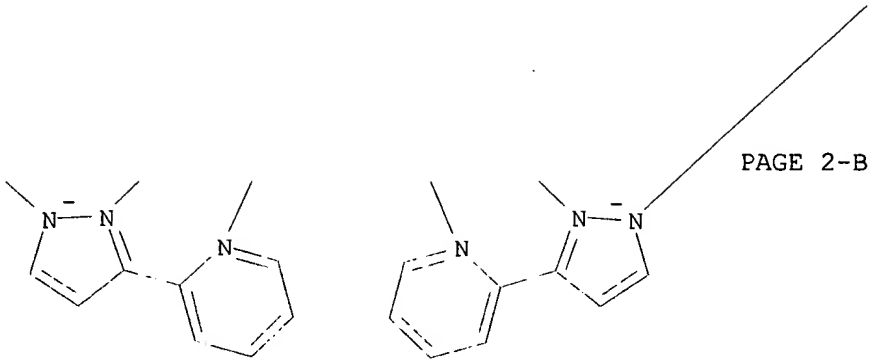


PAGE 1-B



PAGE 1-C





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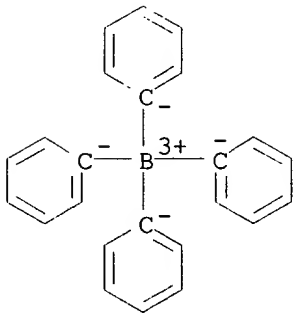
CM 2

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



RN 185199-08-0 HCAPLUS
CN Europium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 185199-07-9
CMF C48 H38 B2 Eu N18
CCI CCS

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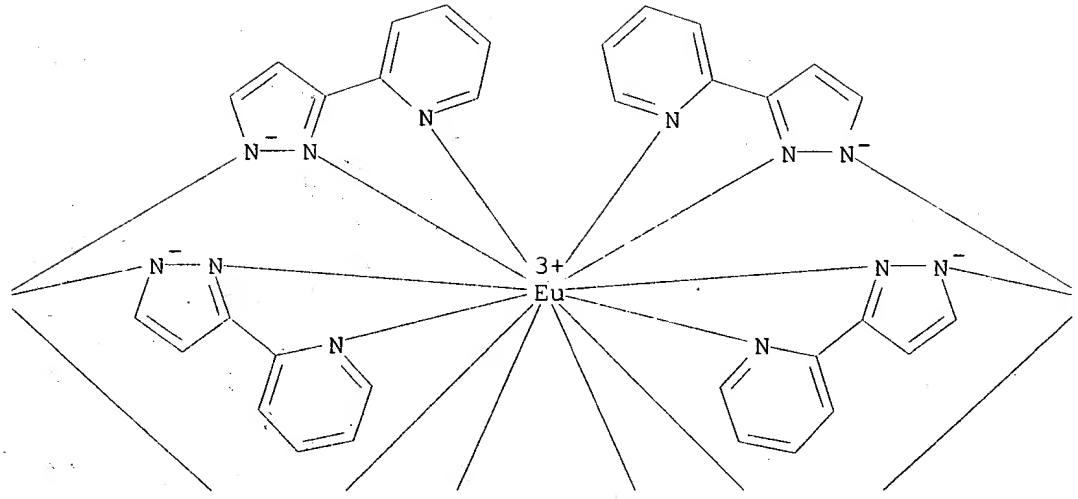
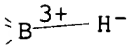
$^{-}H\!\!-\!\!\!-\!\!\!-\!\!\!^{3+}B$

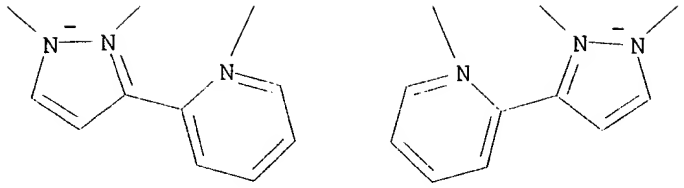
PAGE 1-B



PAGE 1-C

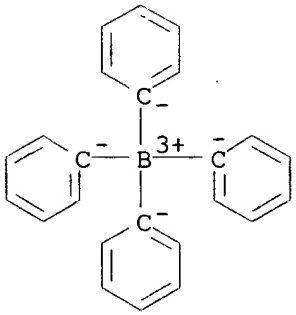


PAGE 2-B



CM 2

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



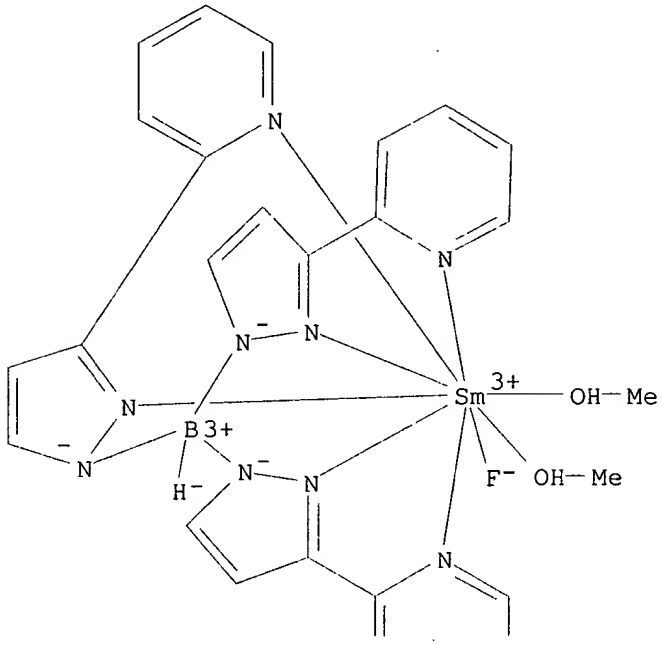
IT **185198-89-4P 185198-91-8P 185198-93-0P**
185199-10-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 185198-89-4 HCAPLUS
CN Samarium(1+), fluoro[hydrotris[2-(1H-pyrazol-3-yl-

.kappa.N1)pyridinato]borato(1-)]bis(methanol)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

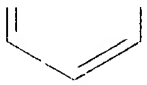
CM 1

CRN 185198-88-3
CMF C26 H27 B F N9 O2 Sm
CCI CCS

PAGE 1-A

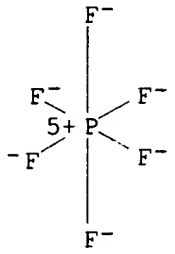


PAGE 2-A



CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

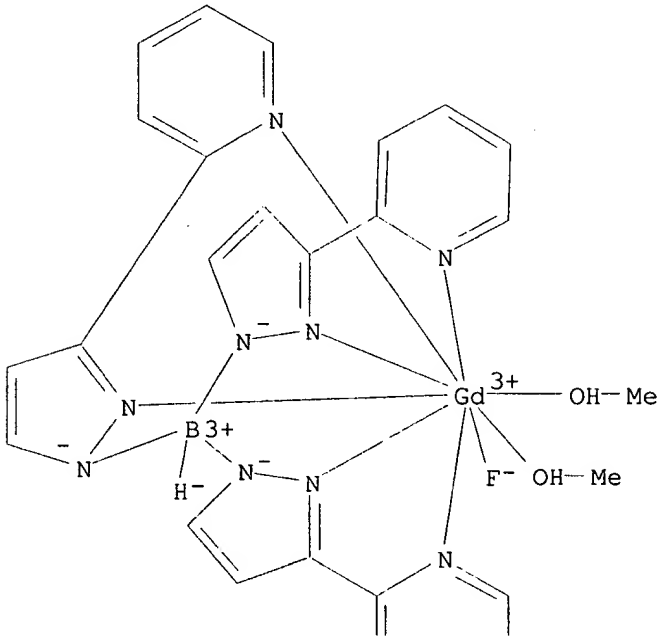


RN 185198-91-8 HCAPLUS
CN Gadolinium(1+), fluoro[hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(methanol)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 185198-90-7
CMF C26 H27 B F Gd N9 O2
CCI CCS

PAGE 1-A



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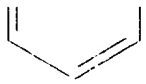
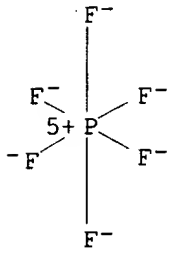


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS

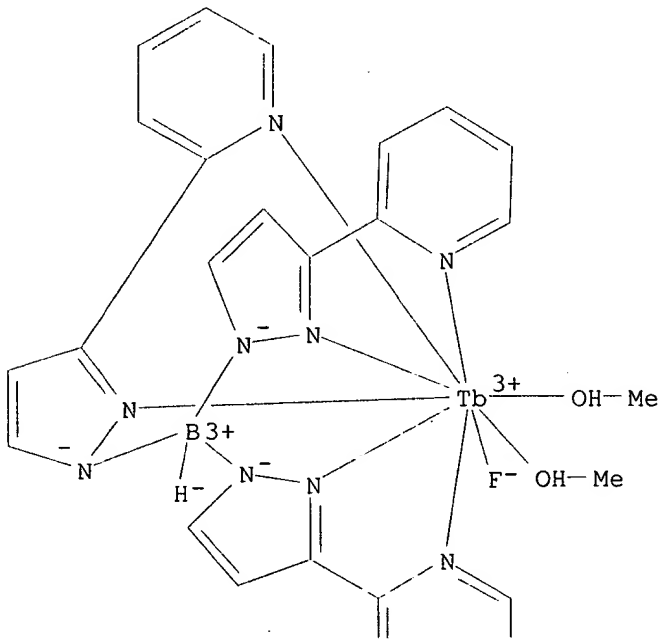


RN 185198-93-0 HCAPLUS
CN Terbium(1+), fluoro[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]bis(methanol)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 185198-92-9
CMF C26 H27 B F N9 O2 Tb
CCI CCS

PAGE 1-A



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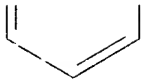
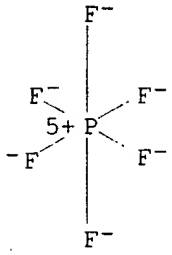


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



RN 185199-10-4 HCAPLUS
CN Gadolinium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 185199-09-1
CMF C48 H38 B2 Gd N18
CCI CCS

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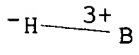

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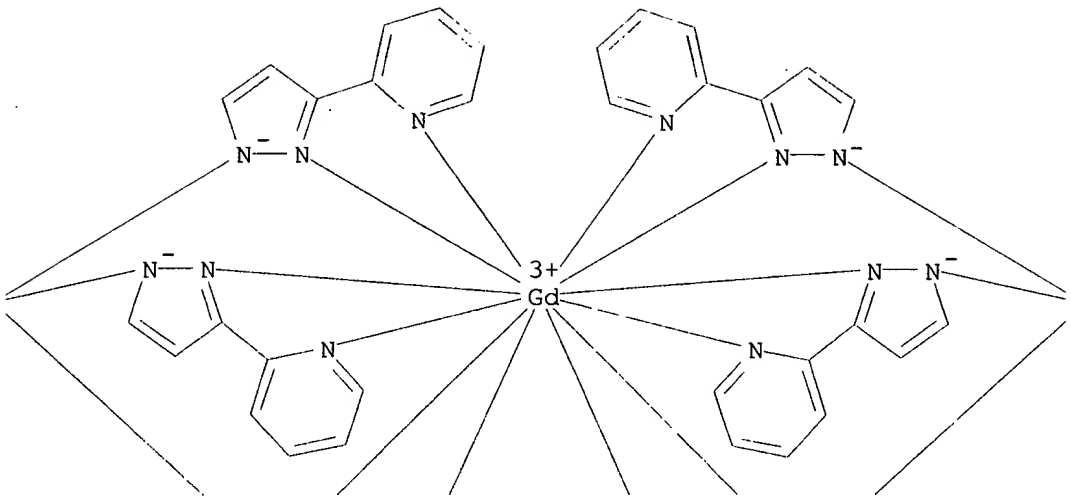

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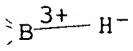
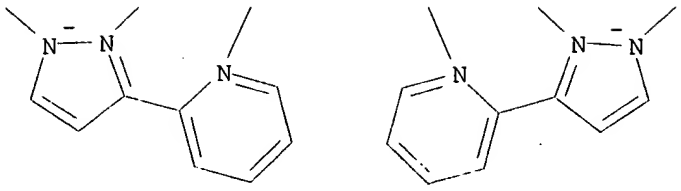
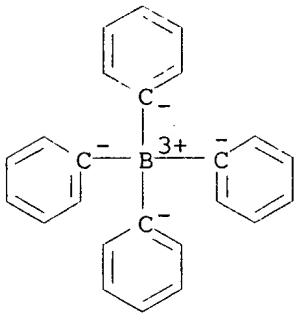


PAGE 2-B



CM 2

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



IT **185199-03-5P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., **luminescence**, NMR relaxivity, and soln. cond. of)
RN 185199-03-5 HCAPLUS
CN Terbium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

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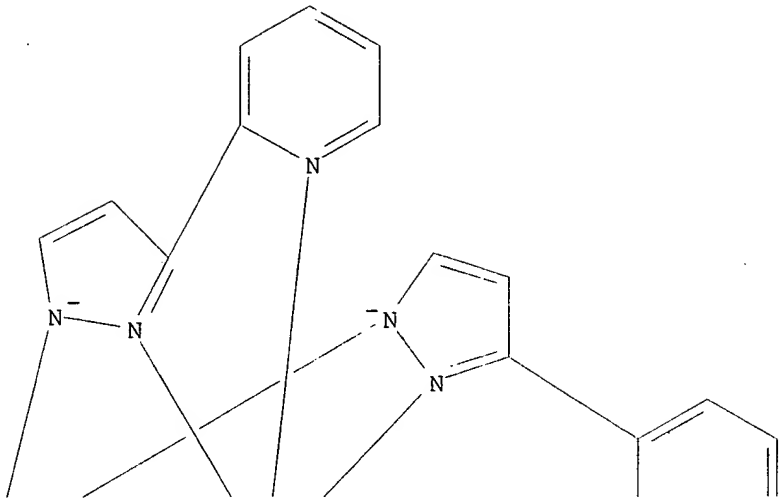

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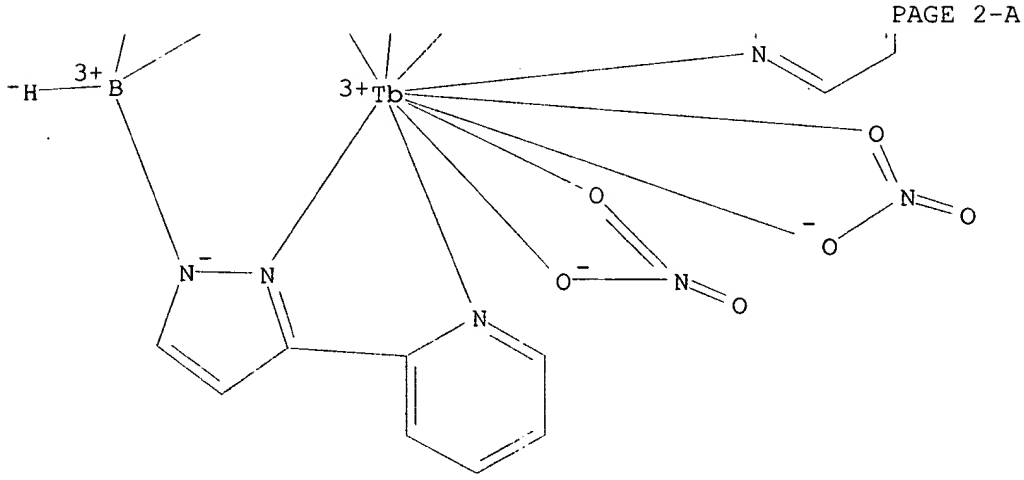

IT **185199-12-6P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., **luminescence**, and soln. cond. of)
RN 185199-12-6 HCAPLUS
CN Terbium(1+), bis[hydrotris[2-(1H-pyrazol-3-yl)pyridinato]borato(1-)]-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 185199-11-5

CMF C48 H38 B2 N18 Tb
CCI CCS

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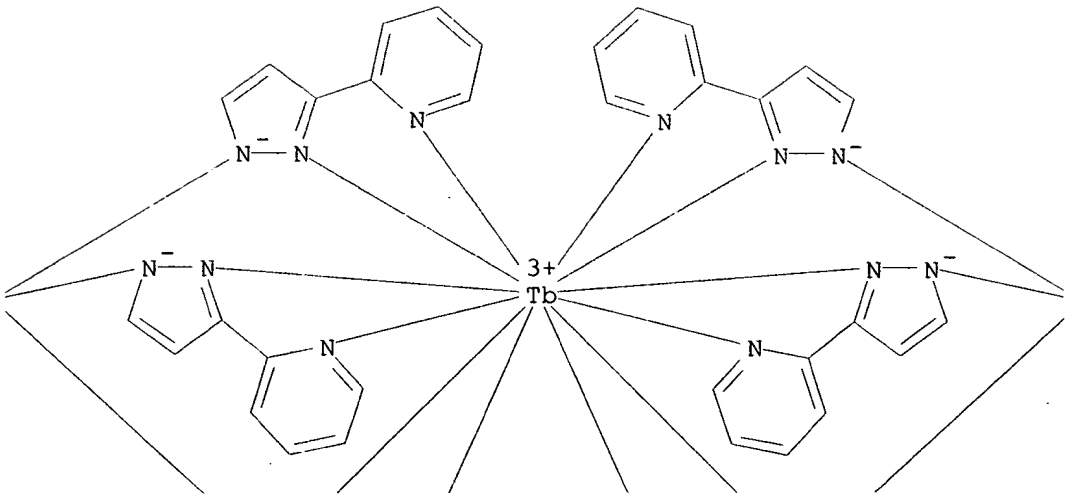
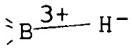


PAGE 1-C



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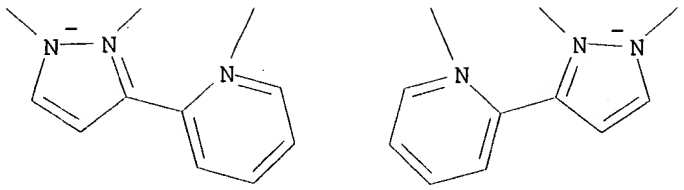
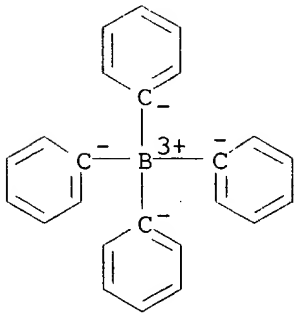


CM 2

CRN 4358-26-3
CMF C24 H20 B
CCI CCS



IT **185199-01-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn., mol. structure, **luminescence**, NMR relaxivity, and soln. cond. of)
RN 185199-01-3 HCAPLUS
CN Europium, [hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-

)]bis(nitrato-.kappa.O,.kappa.O')- (9CI) (CA INDEX NAME)

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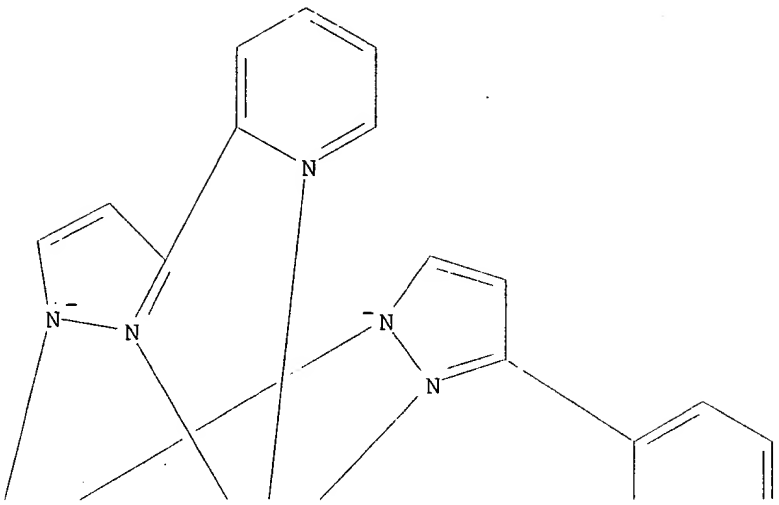

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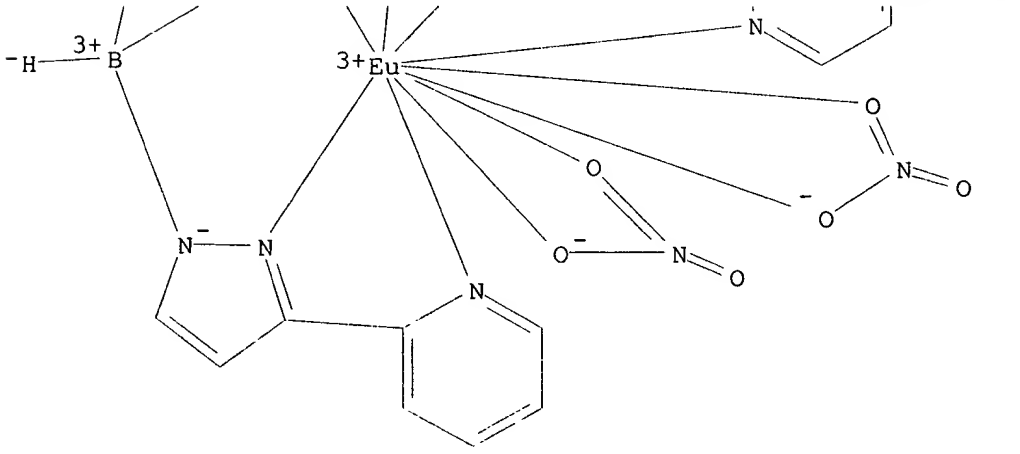

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AN 1996:125920 HCAPLUS
DN 124:248762
TI Heteroleptic poly(pyrazolyl)borate derivatives of the lanthanides. Structural and electronic spectral studies of some salicylaldehyde complexes
AU Lawrence, Royston G.; Jones, Christopher J.; Kresinski, Roman A.

CS Sch. Chem., Univ. Birmingham, Birmingham, B15 2TT, UK
SO J. Chem. Soc., Dalton Trans. (1996), (4), 501-7
CODEN: JCDTBI; ISSN: 0300-9246
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
AB [Ln{HB(pz)3}2L] [pz = pyrazol-1-yl; L = salicylaldehydate, Ln = Y, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Yb or Lu; L = 5-methoxysalicylaldehydate (mosal), Ln = Y, Pr, Nd, Sm, Eu, Gd, Tb, Yb or Lu] were synthesized and the crystal structure of [Eu{HB(pz)3}2(mosal)] detd. The Eu ion is eight-coordinate with Eu-O distances of 2.266(5) and 2.402(5) .ANG.; polytopal anal. indicates that the coordination geometry is best described as dodecahedral. The solid-angle sum of 0.768 is close to the norm for eight-coordination. These structural parameters were compared with those calcd. for the previously reported binuclear complex [{Sm[HB(pz)3]2(O2CPh)}2] and estd. for its monomeric counterpart, which is as yet unknown. The use of such data in predicting when complexes of this type will dimerize was assessed. Electronic spectra of the Nd complexes revealed <1% covalency in the metal-ligand bonding and emission spectral data are reported for the Eu and Tb complexes.
ST crystal structure europium pyrazolylborato salicylaldehydato; rare earth pyrazolylborato salicylaldehydato prepn
IT Crystal structure
Molecular structure
(of europium pyrazolylborato salicylaldehydato complex)
IT **Luminescence**
(of rare earth pyrazolylborato salicylaldehydato complexes)
IT Rare earth compounds
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(pyrazolylborato salicylaldehydato complexes; prepn. and emission spectra of)
IT Ultraviolet and visible spectra
(emission, of rare earth pyrazolylborato salicylaldehydato complexes)
IT 90-02-8, Salicylaldehyde, reactions 672-13-9, 5-Methoxysalicylaldehyde 18583-60-3, Potassium hydrotris(1-pyrazolyl)borate
RL: RCT (Reactant)
(for prepn. of rare earth pyrazolylborato salicylaldehydato complexes)
IT **175091-43-7P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure and emission spectra of)
IT **175091-38-0P 175091-39-1P 175091-40-4P**
175091-41-5P 175091-42-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and emission spectra of)
IT 175091-23-3P 175091-24-4P **175091-25-5P 175091-26-6P**
175091-27-7P 175091-28-8P **175091-29-9P** 175091-30-2P
175091-31-3P 175091-32-4P 175091-33-5P **175091-34-6P**
175091-35-7P 175091-36-8P 175091-37-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
IT **175091-43-7P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and crystal structure and emission spectra of)
RN 175091-43-7 HCAPLUS
CN Europium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxy-5-methoxybenzaldehydato-O1,O2)-, (DD-8-13233'3'3'3)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **175091-38-0P 175091-39-1P 175091-40-4P**
175091-41-5P 175091-42-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and emission spectra of)
RN 175091-38-0 HCAPLUS
CN Neodymium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxybenzaldehydato-O,O')- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-39-1 HCAPLUS
CN Europium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxybenzaldehydato-O,O')- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-40-4 HCAPLUS
CN Terbium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxybenzaldehydato-O,O')- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-41-5 HCAPLUS
CN Neodymium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxy-5-methoxybenzaldehydato-O1,O2)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-42-6 HCAPLUS
CN Terbium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxy-5-methoxybenzaldehydato-O1,O2)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **175091-25-5P 175091-26-6P 175091-29-9P**
175091-34-6P 175091-35-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)
RN 175091-25-5 HCAPLUS
CN Samarium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxybenzaldehydato-O,O')- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-26-6 HCAPLUS
CN Gadolinium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxybenzaldehydato-O,O')- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-29-9 HCAPLUS
CN Erbium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxybenzaldehydato-O,O')- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-34-6 HCAPLUS
CN Samarium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxy-5-methoxybenzaldehydato-O1,O2)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 175091-35-7 HCAPLUS
CN Gadolinium, bis[hydrotris(1H-pyrazolato-N1)borato(1-)-N2,N2',N2'']{2-hydroxy-5-methoxybenzaldehydato-O1,O2)- (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L16 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1995:323915 HCAPLUS
DN 122:150111
TI Synthesis of the new tripodal ligand tris-[3-(2'-pyridyl)pyrazol-1-yl]hydroborate, and the crystal structure of its europium(III) complex
AU Amoroso, Angelo J.; Thompson, Alexander M. Cargill; Jeffery, John C.; Jones, Peter L.; McCleverty, Jon A.; Ward, Michael D.
CS Sch. Chem., Univ. Bristol, Bristol, BS8 1TS, UK
SO J. Chem. Soc., Chem. Commun. (1994), (24), 2751-2
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 28, 75
AB The new tripodal ligand tris-[3-(2'-pyridyl)pyrazol-1-yl]hydroborate (L-), comprising three N,N,-bidentate chelating arms linked by the apical B atom, was synthesized; the crystal structure of [EuL(MeOH)2F][PF6] reveals the nine-coordinate metal lying within the hexadentate ligand cavity.
ST crystal structure europium complex pyridylpyrazolylborate; borate trispyridylpyrazolylhydro europium complex; pyrazolylborate pyridyl deriv europium complex
IT Crystal structure
Luminescence
Molecular structure
(of europium complex with tris[(pyridyl)pyrazolyl]hydroborate)
IT 68-12-2, DMF, reactions 302-01-2, Hydrazine, reactions 1122-62-9, 2-Acetylpyridine 13762-51-1, Potassium tetrahydroborate(1-)
RL: RCT (Reactant)
(for prepn. of tris[(pyridyl)pyrazolyl]hydroborate and europium complex)
IT 75415-03-1P, 3-(2'-Pyridyl)pyrazole 123367-25-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(for prepn. of tris[(pyridyl)pyrazolyl]hydroborate and europium complex)
IT 161095-31-4P, Potassium tris[3-(2'-pyridyl)pyrazol-1-yl]hydroborate(1-)
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and complexation with europium)
IT **161095-30-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure and **luminescence** of)
IT **161095-30-3P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure and **luminescence** of)
RN 161095-30-3 HCAPLUS
CN Europium(1+), fluoro[hydrotris[2-(1H-pyrazol-3-yl-.kappa.N1)pyridinato]borato(1-)]bis(methanol)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 161095-29-0
CMF C26 H27 B Eu F N9 O2
CCI CCS

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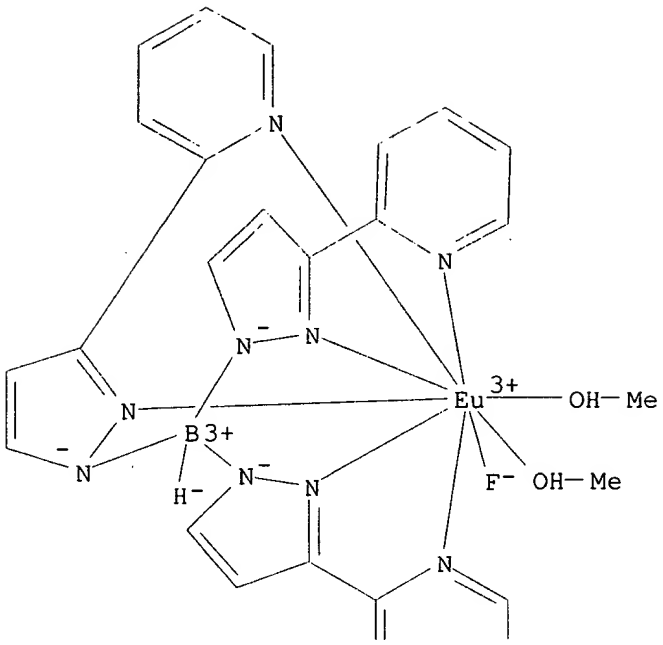

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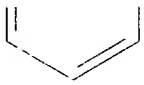
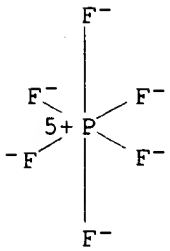


CM 2

CRN 16919-18-9
CMF F6 P
CCI CCS



L16 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1991:217117 HCAPLUS
DN 114:217117

TI **Luminescence** studies of tris[dihydrobis(1-pyrazolyl)borato]terbium(III)

AU Reger, Daniel L.; Chou, Pi Tai; Studer, Shannon L.; Knox, Steven J.; Martinez, Marty L.; Brewer, William E.

CS Dep. Chem., Univ. South Carolina, Columbia, SC, 29208, USA

SO Inorg. Chem. (1991), 30(10), 2397-402
CODEN: INOCAJ; ISSN: 0020-1669

DT Journal

LA English

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB The **luminescence** spectra and dynamics of [H2B(pz)2]3Tb were studied at different temps., in the solid phase, and in various solvents. Anal. of the data for the cryst. sample based on the electron dipole selection rules reveals effective C3 symmetry. Thus, the **luminescence** spectra are those expected for the trigonal-prismatic arrangement of the nitrogen donor atoms, but are influenced by the three weak BH---Tb three-center bonds to each of the rectangular faces. Similar **luminescence** spectra were obsd. for [H2B(pz)2]3Tb in CH2Cl2 and toluene solns. In donor solvents, complexation of [H2B(pz)2]3Tb with the solvent mols. changes the lifetime and the spectral features of the **luminescence**, indicating a change in the coordination environment about [H2B(pz)2]3Tb.

ST **luminescence** terbium dihydrobispyrazolylborato; hydrobispyrazolylborato terbium **luminescence**; pyrazolylborato hydro borato terbium **luminescence**; solvent effect terbium hydrobispyrazolylborato **luminescence**; THF solvent effect terbium hydrobispyrazolylborato **luminescence**; acetonitrile solvent effect terbium hydrobispyrazolylborato **luminescence**

IT **Luminescence**
(of tris(dihydrobispyrazolylborato)terbium, solvent effect on)

IT Solvent effect
(on **luminescence**, of trisdihydrobispyrazolylboratoterbium)

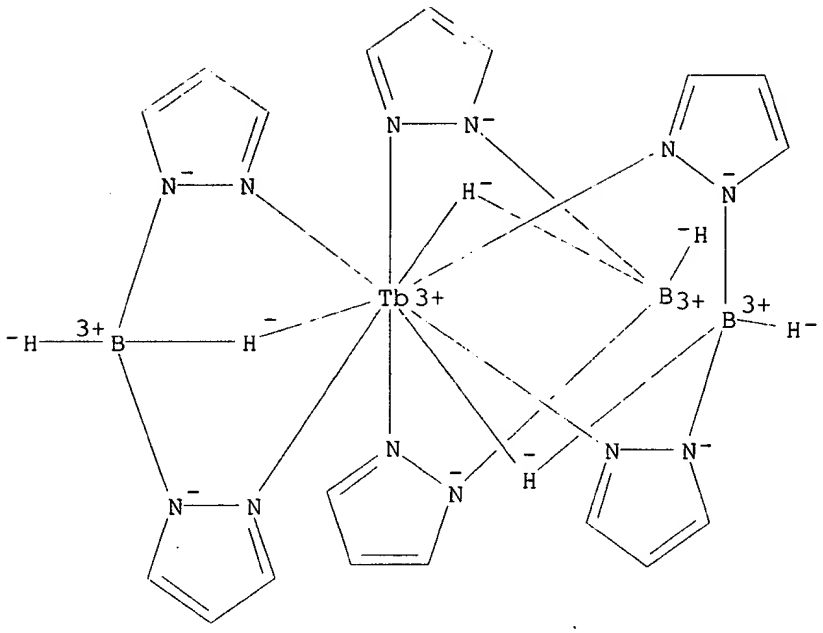
IT **124755-02-8**
RL: PRP (Properties)
(**luminescence** of, crystal symmetry and solvent effect on coordination in relation to)

IT 75-05-8, Acetonitrile, properties 109-99-9, properties
RL: PRP (Properties)
(solvent effect of, on fluorescence of trisdihydrobispyrazolylboratoterbium)

IT **124755-02-8**
RL: PRP (Properties)
(**luminescence** of, crystal symmetry and solvent effect on coordination in relation to)

RN 124755-02-8 HCAPLUS

CN Terbium, tris[dihydrobis(1H-pyrazolato-N1)borato(1-)-H,N2,N2']-, (TPS-9-1121'1'2'1''1''2'')- (9CI) (CA INDEX NAME)



L16 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 1985:69597 HCAPLUS
DN 102:69597
TI Absorption and emission spectra of neodymium(III) and europium(III) complexes
AU Seminara, A.; Musumeci, A.
CS Ist. Dip. Chim. Chim. Ind., Univ. Catania, Catania, 95125, Italy
SO Inorg. Chim. Acta (1984), 95(6), 291-307
CODEN: ICHAA3; ISSN: 0020-1693
DT Journal
LA English
CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 78
AB The absorption and emission spectra of several complexes of Nd(III) and Eu(III) ions were examd. to obtain reliable information relating to coordination no., nature of bonding and symmetry around the lanthanide ion. Steric factors may force the polyhedron of coordination towards geometries less favorable by ligand-ligand repulsion. In general, no correlation was found between the low intensity of the hypersensitive transitions and high symmetry or low symmetry and high intensity. The results have pointed out the role of covalency in hypersensitivity.
ST UV visible europium neodymium complex; **luminescence** europium neodymium complex
IT Energy level
Luminescence
Ultraviolet and visible spectra
(of europium and neodymium complexes)
IT Bond
Coordination number
(of europium and neodymium in complexes)
IT Energy level transition
(hypersensitive, of europium and neodymium complexes)
IT 33461-92-6 47894-14-4 47894-18-8 47894-20-2 51187-22-5

51187-25-8 51221-90-0 53062-59-2 55230-65-4 55230-66-5
55237-82-6 55237-87-1 55238-02-3 55238-04-5 59370-54-6
67904-18-1 67904-27-2 67908-16-1 67908-34-3 67908-35-4
67908-36-5 67945-40-8 67965-57-5 70948-77-5 70948-78-6
89504-01-8 89554-45-0 89554-53-0 **94369-53-6** 94369-54-7
94369-55-8 94369-56-9 94369-57-0 94369-58-1 94369-82-1
94403-86-8 94426-30-9
RL: PRP (Properties)
(absorption and emission spectrum of)

IT **94369-53-6 94403-86-8**
RL: PRP (Properties)
(absorption and emission spectrum of)

RN 94369-53-6 HCAPLUS

CN Europium, tris[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (TPS-9-1111'1'1'1''1''1'')- (9CI) (CA INDEX NAME)

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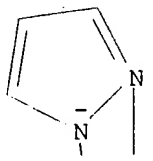

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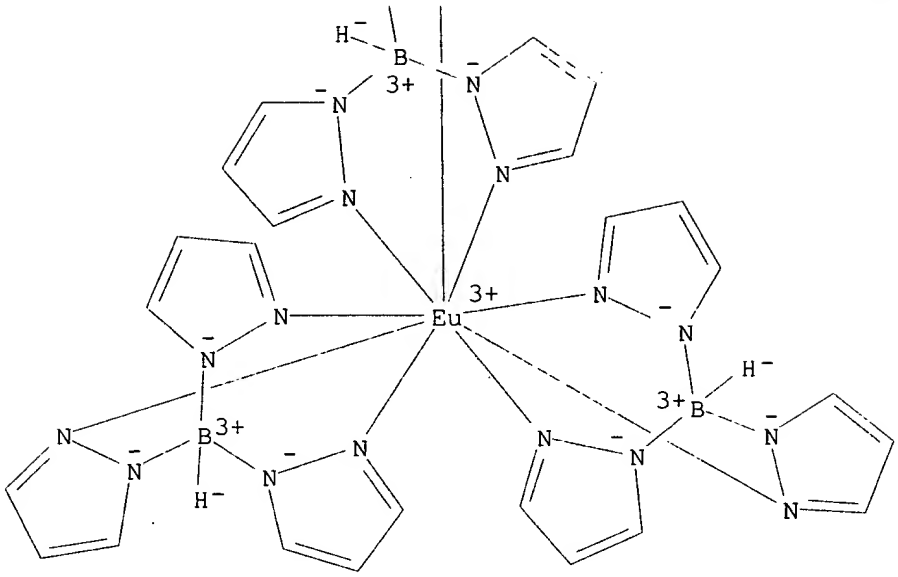

RN 94403-86-8 HCAPLUS
CN Neodymium, tris[hydrotris(1H-pyrazolato-.kappa.N1)borato(1-)-.kappa.N2,.kappa.N2',.kappa.N2'']-, (TPS-9-1111'1'1'1''1''1'')- (9CI) (CA INDEX NAME)

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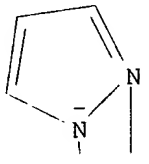

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